

APPENDIX K
TRANSPORTATION STUDY

OCEAN AVENUE PROJECT TRANSPORTATION IMPACT ANALYSIS

SANTA MONICA, CALIFORNIA

April 2020

PREPARED FOR

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.

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EXECUTIVE SUMMARY

In support of the Environmental Impact Report (EIR) being prepared in accordance with the California Environmental Quality Act (CEQA), this study analyzes the potential transportation impacts of the proposed Ocean Avenue Project (Project) in the City of Santa Monica (City). This study describes existing transportation network conditions, identifies the assumptions and methodologies used to analyze the proposed Project's impacts on intersection operations and vehicle miles traveled (VMT), and provides a comparative analysis of the transportation impacts for the proposed Project and its alternatives. Potential impacts to transit, bicycle and pedestrian facilities, other operational issues are discussed in the EIR.

PROJECT DESCRIPTION

The Project site is located on two parcels separated by 1st Court, refer to herein as the "Ocean Avenue Parcel" and the "2nd Street Parcel." The Ocean Avenue Parcel is approximately 52,500 square feet (sf) (1.2 acres), bounded by Ocean Avenue to the west, Santa Monica Boulevard to the south, 1st Court to the east, and 1301 Ocean Avenue to the north. The 2nd Street Parcel is approximately 30,000 sf (0.69 acres), bounded by 1st Court to the west, Santa Monica Boulevard to the south, 2nd Street to the east, and 1332 2nd Street to the north. Collectively, these two parcels (along with the portion of 1st Court adjacent to and between the two parcels) are considered the "Project site." Project components include:

- A hotel building consisting of 120 rooms and associated meeting, banquet, and spa space located in the central portion the Ocean Avenue Parcel
- 100 residential apartments (including 19 replacement rent-controlled apartments plus deed-restricted affordable units and market-rate units) located on the upper floors of the buildings located at the corner of Ocean Avenue and Santa Monica Boulevard and on the 2nd Street Parcel.
- Approximately 36,110 sf of retail and restaurant uses (including outdoor dining areas)
- An approximately 35,500-sf Cultural Use Campus located at the northern end of the Ocean Avenue Parcel consisting of two existing City-designated landmarks located at 1333 and 1337 Ocean Avenue that will be rehabilitated and relocated on the northern portion of the Project site along Ocean Avenue and a new building located behind (i.e., to the east of) the City-designated landmark buildings
- An approximately 5,000-sf public observation deck (including approximately 1,000 sf of restrooms and lobby area) will be provided on the roof of the Hotel Building
- A subterranean parking garage with capacity for up to 285 vehicles

Vehicular access to the Project site would be provided via 1st Court (ingress) and 2nd Street (egress). 1st Court is a one-way alley that currently runs north-south from Arizona Avenue to Santa Monica Boulevard. Under the proposed Project 1st Court would be rerouted into an "L"-shaped configuration and vehicles traveling



south from Arizona Avenue would turn the east through a tunnel beneath proposed structures across the northern portion of the 2nd Street Parcel to 2nd Street.

Vehicular egress from the proposed subterranean parking garage would be provided via a driveway out to 2nd Street adjacent to the new alley across the 2nd Street Parcel. Vehicular egress from both the re-routed alley and the subterranean parking garage would be restricted to right-turn only onto 2nd Street.

SUMMARY OF IMPACTS

This study analyzed 40 intersections for potential impacts related to intersection operations and vehicle delay. California law regarding transportation impacts is in the midst of a transition from intersection vehicle delay-based criteria to measuring impacts based on VMT (see Chapter 4). However, the City has not yet adopted VMT-based impact significance criteria and is not required to do so until July 1, 2020. Nevertheless, this study includes analysis of both intersection delay-based level of service (LOS) and VMT effects of the proposed Project.

Based on locally developed trip generation rates (see Chapter 3), it is estimated that the proposed Project would generate a total of approximately 186 weekday AM peak hour trips, 248 weekday PM peak hour trips and 259 weekend midday peak hour trips. Taking into account the removal of the existing uses, the proposed Project is expected to generate net-new travel of approximately 146 trips in the weekday AM peak hour, 146 trips in the weekday PM peak hour and 168 trips in the weekend midday peak hour.

Approval Year (2020) Plus Project Intersection Analysis

Based on the City's adopted impact significant criteria, the addition of project traffic is expected to result in significant traffic impacts at four locations under Approval Year (2020) Plus Project traffic conditions:

1. Palisades Beach Road & California Incline
2. Ocean Avenue & California Avenue
11. 2nd Street & Wilshire Boulevard
16. Main Street & Olympic Drive



**TABLE ES-1
SUMMARY OF PROPOSED PROJECT INTERSECTION IMPACTS**

No.	INTERSECTION	PEAK HOUR	APPROVAL YEAR (2020)	FUTURE YEAR (2025)
1	PALISADES BEACH ROAD & CALIFORNIA INCLINE	AM PM WKND	X	X
2	OCEAN AVENUE & CALIFORNIA AVENUE	AM PM WKND	X X	X X X
11	SECOND STREET & WILSHIRE BOULEVARD	AM PM WKND	X	
12	SECOND STREET & ARIZONA AVENUE	AM PM WKND		X
13	SECOND STREET & SANTA MONICA BOULEVARD	AM PM WKND		X
16	MAIN STREET & OLYMPIC DRIVE	AM PM WKND	X X	X X
19	FOURTH STREET & ARIZONA AVENUE	AM PM WKND		X X
Total Impacted Intersections:			4	6

Future Year (2025) Plus Project Intersection Analysis

Based on the City's adopted impact significance criteria, the addition of project traffic is expected to result in significant traffic impacts at six locations under Future Year (2025) Plus Project traffic conditions:

1. Palisades Beach Road & California Incline
2. Ocean Avenue & California Avenue
12. 2nd Street & Arizona Avenue
13. 2nd Street & Santa Monica Boulevard
16. Main Street & Olympic Drive
19. 4th Street & Arizona Avenue

Intersection #11, 2nd Street & Wilshire Boulevard, is impacted under Approval Year (2020) Plus Project, but under the Future Year (2025) Plus Project traffic conditions, primarily due to a nearby cumulative development project which substantially increases the average delay at this intersection. As a result, under future conditions, the addition of this proposed Project traffic is relatively minor and does not trigger an impact, even though the intersection is projected to operate at LOS F.

Intersection Mitigation Measures

Mitigation measures for the seven significantly impacted intersection under the Approval Year (2020) Plus Project and Future Year (2025) Plus Project were considered. One impact could be mitigated to less than significant levels at 2nd Street & Wilshire Boulevard through the restriping of travel lanes. All other impacts cannot be fully mitigated without potential secondary impacts related to pedestrian safety goals and policies outlined in the City's Land Use and Circulation Element (LUCE) and Downtown Community Plan (DCP). Therefore, under both the Approval Year (2020) and Future Year (2025) conditions, the proposed Project would result in significant and unavoidable impacts at six intersections.

Vehicle Miles Traveled

Based on Office of Planning and Research (OPR) guidance, the proposed Project could be assumed to generate a less than significant level of VMT, given that it falls in a high-quality transit priority area (TPA) (including the Los Angeles County Metropolitan Transportation Authority [Metro] E Line (Expo) Light Rail as well as numerous Metro and Big Blue Bus lines operating at headways of 15 minutes or less throughout the day). The proposed Project provides a mix of residential, retail, and other uses in an area with low VMT, and proposes to build no more than the maximum parking allowed by the City in the Downtown. As previously described, the City has not, at the time of this report, finalized criteria or analysis methods for evaluating VMT. Despite these factors, this study provides an evaluation of the potential VMT effects of the project for informational purposes in Chapter 4.



1. INTRODUCTION

Fehr & Peers evaluated the potential transportation impacts of the proposed Ocean Avenue Project (proposed Project) in the City of Santa Monica (City). This study identifies the existing conditions of the City's transportation network, describes the assumptions and methodologies for the analysis, and summarizes the findings of this study, which was conducted as part of the Environmental Impact Report (EIR) for the proposed Project.

PROJECT DESCRIPTION

The Project site is located on two parcels separated by 1st Court, refer to herein as the "Ocean Avenue Parcel" and the "2nd Street Parcel." The Ocean Avenue Parcel is approximately 52,500 square feet (sf) (1.2 acres), bounded by Ocean Avenue to the west, Santa Monica Boulevard to the south, 1st Court to the east, and 1301 Ocean Avenue to the north. The 2nd Street Parcel is approximately 30,000 sf (0.69 acres), bounded by 1st Court to the west, Santa Monica Boulevard to the south, 2nd Street to the east, and 1332 2nd Street to the north. Collectively, these two parcels (along with the portion of 1st Court adjacent to and between the two parcels) are considered the "Project site." Project components include:

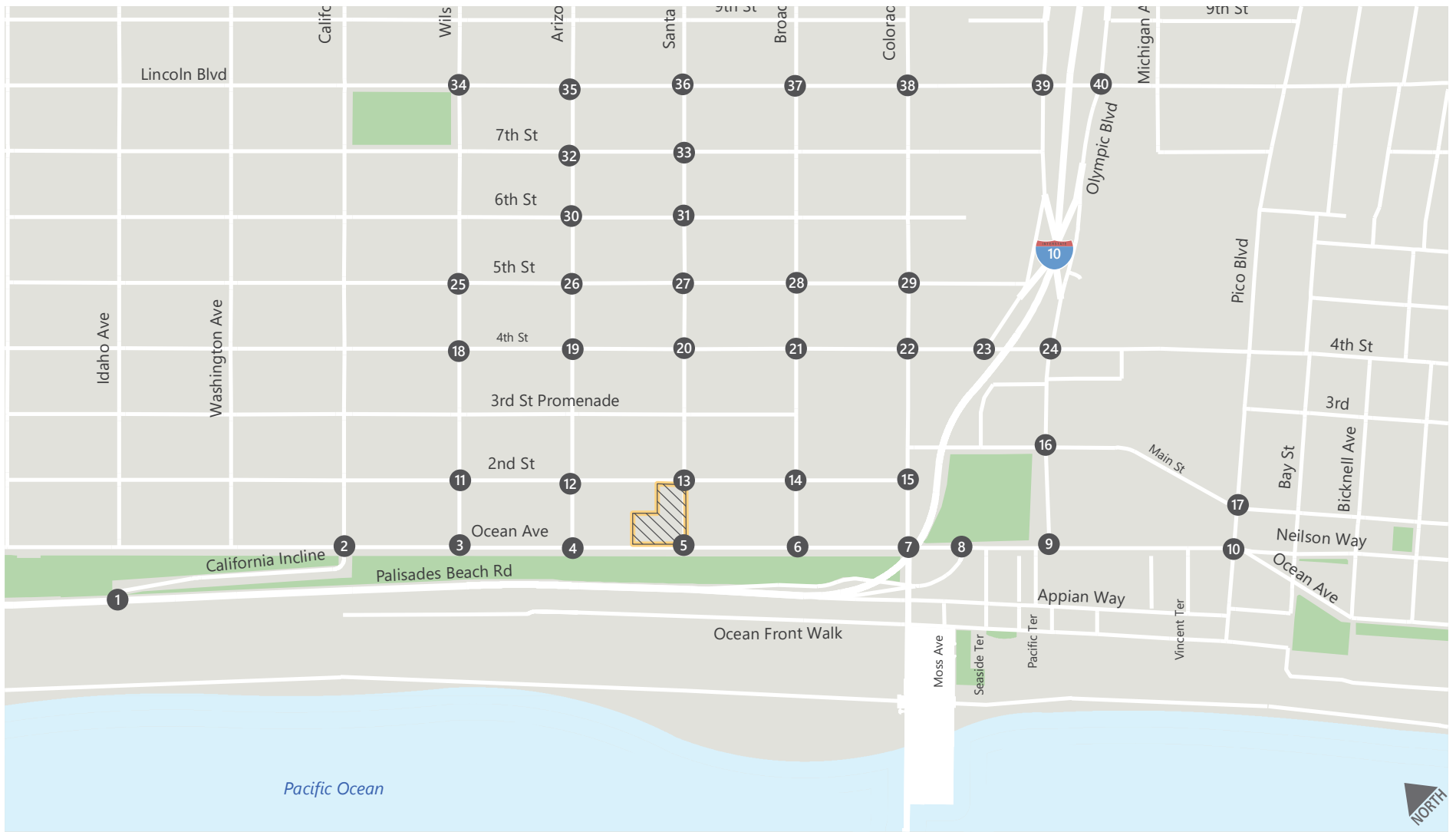
- A hotel building consisting of 120 rooms and associated meeting, banquet, and spa space located in the central portion the Ocean Avenue Parcel
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- An approximately 5,000-sf public observation deck (including approximately 1,000 sf of restrooms and lobby area) will be provided on the roof of the Hotel Building
- A subterranean parking garage with capacity for up to 285 vehicles

Vehicular access to the Project site would be provided via 1st Court (ingress) and 2nd Street (egress). 1st Court is a one-way alleyway that currently runs north-south from Arizona Avenue to Santa Monica Boulevard. Under the proposed Project 1st Court would be rerouted into an "L"-shaped configuration and vehicles traveling south from Arizona Avenue would turn the east through a tunnel beneath proposed structures across the northern portion of the 2nd Street Parcel to 2nd Street.



Vehicular egress from the proposed subterranean parking garage would be provided via a driveway out to 2nd Street adjacent to the new alley across the 2nd Street Parcel. Vehicular egress from both the re-routed alley and the subterranean parking garage would be restricted to right-turn only onto 2nd Street.





- Study Intersections
- ▨ Project Site



Figure 1
Ocean Avenue EIR - Traffic Study Area and Study Intersections



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CONSULTANTS

Conceptual Plan
 for Reference Only
 Design Work in Progress

THE OCEAN AVENUE PROJECT

TITLE
LEVEL 01 FLOOR PLAN

PROJECT: 2007-032
 SCALE: 1/16"=1'-0"
 DRAWN BY: A2-201

Source: Gehry Partners, LLP, 2020.



Figure 2
 Site Plan

STUDY SCOPE

In accordance with the California Environmental Quality Act (CEQA) and City transportation study requirements, this study covers a range of various topics, including intersection operations, vehicle miles traveled, and project alternatives.

In the past, this study might have included an analysis of regional transportation network operations under California's Congestion Management Program (CMP). However, as of July, 2019, a majority of jurisdictions falling under the region's CMP adopted opt-out resolutions in accordance with Metro Board action in June 2018¹. Based on conversations Fehr & Peers held with Metro in late 2019, the CMP requirements are no longer in effect for Los Angeles County.

Intersection Operations

This study evaluates the potential of the proposed Project to impact surrounding intersections as a result of Project-generated vehicle trips. Specifically, the proposed Project's peak hour traffic impacts during the typical weekday AM (7:30 to 9:30 AM) and weekday PM (5:00 to 7:00 PM) peak hours were evaluated. In addition, since the Project site is located in the popular Downtown where weekend traffic volumes tend to be relatively high, the study also analyzed traffic impacts during the weekend midday (1:00 to 5:00 PM) peak hour for all locations on and west of Lincoln Boulevard.

In consultation with City staff, 40 intersections in the vicinity of the Project site were selected for analysis. These intersections were selected as the ones most likely to be affected by Project-generated vehicle trips. Per City transportation study requirements, all 40 study intersections were analyzed using the *Highway Capacity Manual* (HCM) (Transportation Research Board 2010) operations methodology. All study intersections are currently controlled by traffic signals. The intersections are listed below and illustrated in Figure 1:

1. Palisades Beach Road & California Incline
2. Ocean Avenue & California Avenue
3. Ocean Avenue & Wilshire Boulevard
4. Ocean Avenue & Arizona Avenue
5. Ocean Avenue & Santa Monica Boulevard
6. Ocean Avenue & Broadway
7. Ocean Avenue & Colorado Avenue
8. Ocean Avenue & Moomat Ahiko Way

¹ Congestion Management Program Opt-Out, June 20, 2018. Accessed April 7, 2020. <https://boardagendas.metro.net/board-report/2018-0122/>



Ocean Avenue Project Transportation Impact Analysis
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9. Ocean Avenue & Olympic Boulevard
10. Ocean Avenue/Neilson Way & Pico Boulevard
11. 2nd Street & Wilshire Boulevard
12. 2nd Street & Arizona Avenue
13. 2nd Street & Santa Monica Boulevard
14. 2nd Street & Broadway
15. 2nd Street/Main Street & Colorado Avenue
16. Main Street & Olympic Drive
17. Main Street & Pico Boulevard
18. 4th Street & Wilshire Boulevard
19. 4th Street & Arizona Avenue
20. 4th Street & Santa Monica Boulevard
21. 4th Street & Broadway
22. 4th Street & Colorado Avenue
23. 4th Street & I-10 Westbound Off-Ramp
24. 4th Street & I-10 Eastbound On-Ramp
25. 5th Street & Wilshire Boulevard
26. 5th Street & Arizona Avenue
27. 5th Street & Santa Monica Boulevard
28. 5th Street & Broadway
29. 5th Street & Colorado Avenue
30. 6th Street & Arizona Avenue
31. 6th Street & Santa Monica Boulevard
32. 7th Street & Arizona Avenue
33. 7th Street & Santa Monica Boulevard
34. Lincoln Boulevard & Wilshire Boulevard
35. Lincoln Boulevard & Arizona Avenue
36. Lincoln Boulevard & Santa Monica Boulevard
37. Lincoln Boulevard & Broadway
38. Lincoln Boulevard & Colorado Avenue
39. Lincoln Boulevard & I-10 Westbound Off-Ramp
40. Lincoln Boulevard & I-10 Eastbound On-Ramp

The following traffic scenarios were analyzed in the study to determine the potential for impacts to the 40 study intersections:

- Existing Year (2017) – The analysis of existing traffic conditions provides the basis for the assessment of Approval Year (2020) and Future Year (2025) traffic conditions. The Existing Year (2017) traffic conditions are based on the Citywide weekday and weekend traffic counts collected by the City in 2017 and 2018. The analysis of existing traffic conditions includes a description of key area streets and highways, traffic volumes at intersections, and operating conditions of the intersections.



- Approval Year (2020) No Project Traffic Conditions – This scenario reflects the traffic conditions expected in the anticipated Approval Year (2020) without Project-generated vehicle trips and provides the baseline by which the impacts of the proposed Project in the Approval Year (2020) were evaluated. It includes cumulative development projects that have been or will be completed between the 2017 and 2018 traffic counts and 2020. The latest version of the City's Travel Demand Forecasting Model (TDFM) was used to forecast the Approval Year (2020) No Project traffic conditions.
- Approval Year (2020) Plus Project Traffic Conditions – This scenario reflects the traffic conditions expected in the anticipated Approval Year (2020) with inclusion of the Project-generated vehicle trips. This scenario identifies the potential traffic impacts of the proposed Project on Approval Year (2020) traffic conditions by adding Project-generated vehicle trips to the Approval Year (2020) No Project traffic conditions. The City's TDFM was used to inform Project trip distribution and trip assignment under Approval Year (2020) conditions.
- Future Year (2025) No Project Traffic Conditions – This scenario reflects the future traffic conditions expected in the Future Year (2025) without Project-generated vehicle trips. This scenario identifies future operating conditions of the study intersections as a result of regional growth and known "cumulative projects" in the study area by 2025. This scenario also accounts for future street network changes that would affect traffic conditions. The Future Year (2025) No Project traffic conditions were also developed using the City's TDFM.
- Future Year (2025) Plus Project Traffic Conditions – This analysis reflects the traffic conditions expected in the Future Year (2025) with inclusion of the Project-generated vehicle trips. This scenario was developed using the same methodology described for the Approval Year (2020) Plus Project traffic conditions.

Vehicle Miles Traveled

Authorized in September of 2013, Senate Bill (SB) 743 directed the Office of Planning and Research (OPR) to revise the CEQA Guidelines (California Code of Regulations, Title 14) to establish new criteria for determining the significance of transportation impacts and define alternative metrics for intersection delay-based level of service (LOS). OPR adopted final guidelines in December 2018, and the provisions of SB 743 are now in effect, with agencies having an opt-in period until July 1, 2020. At the time of this publication, the City has not adopted VMT-based impact criteria. A general discussion of VMT analysis is included in this report for informational purposes only.

The estimates of VMT for the proposed Project are based on the OPR guidance, which recommend evaluating each component of a mixed-use project independently. For residential uses, the suggested metric is VMT per capita. Guidance is provided for several broad land use types that account for majority of the development projects that are proposed (i.e., residential, office, and retail). The proposed Project includes hotel, a Cultural Use Campus (anticipated to be similar to a museum), retail, restaurant, and residential. While there is no office-type land use for the proposed Project, employee VMT estimates were



also calculated.

Project Alternatives

Additionally, in accordance with CEQA Guidelines Section 15126.6, this study analyzes the transportation impacts of alternatives to the proposed Project.² As permitted by CEQA, the alternatives are evaluated at a lesser level of detail than the project.

- Alternative 1 – No Project
- Alternative 2 – Tier 2 Mixed-Use Housing Projects Compliant with Ocean Transition and Bayside Conservation District
- Alternative 3 – Reduced Height and Density
- Alternative 4 – Retention of Existing City-Designated Landmarks and 101 Santa Monica Boulevard
- Alternative 5 – Modified Access

Further descriptions of these alternatives are provided in Chapter 6.

ORGANIZATION OF REPORT

This report is divided into six chapters, including this introduction. Chapter 2 describes the existing circulation system (including the roadway network, public transit, bicycle/pedestrian facilities), traffic volumes at intersections, and operating conditions of the intersections in the study area. Chapter 3 describes the assumptions and methodologies used to develop future cumulative traffic forecasts and project traffic volumes. Chapter 4 presents an assessment of potential project traffic impacts on intersection operations in the vicinity of the Project site and an informational evaluation of project VMT. Chapter 5 presents a discussion of potential mitigation measures to address the identified intersection traffic impacts. Chapter 6 analyzes the potential traffic impacts that could result from the alternatives and compares them to the proposed Project.

² As required by CEQA, the study analyzes a range reasonable alternatives to the project and include ones that are potentially feasible, would "feasibly attain most of the basic objectives of the project," and would avoid or substantially lessen any of the project's significant effects.



2. EXISTING TRANSPORTATION CONDITIONS

The Project site is located in the Downtown, which includes a dense urban mix of residential, retail, restaurant, office, entertainment, recreational, and institutional uses. A network of streets, sidewalks, and bikeways provide circulation throughout the City, intermixing automobiles, buses, and people walking and bicycling. The City, and particularly the Downtown, is highly walkable, with sidewalks on every street, traffic signals that prioritize pedestrian activity, and several streets where part or all of the street is given over exclusively to pedestrian activity (e.g., Third Street Promenade and Colorado Esplanade). Most sidewalks throughout Downtown are between 10 and 20 feet wide, varying from block to block or side of the street. Many streets also have visually or physically separated space for bicycles in the form of green-painted bicycle lanes or protected bikeways. These bikeways are heavily used year-round, particularly on Ocean Avenue, Main Street, and intersecting bikeways.

The City's Big Blue Bus network generally converges Downtown around 4th Street, and the western terminus for the Metro E Line (Expo) Light Rail is the Downtown Santa Monica Station, located at 4th Street/Colorado Avenue, approximately 0.5 mile from the Project site.

Due to the proximity of the Project site to popular destinations such as the Third Street Promenade, the Santa Monica Pier, and the oceanfront, nearby intersections can become congested during peak hours including weekends, holidays and events, as vehicles, bicycles, and pedestrians navigate the Downtown. A discussion of the key circulation facilities in the study area is provided below:

EXISTING STREET AND FREEWAY SYSTEM

The Project site is bounded by Santa Monica Boulevard to the south, Arizona Avenue to the north, Ocean Avenue to the west, and 2nd Street to the east in the Downtown. The adjacent streets are described below:

- Santa Monica Boulevard is an east-west roadway that provides surface street access to the Downtown and connects with nearby Los Angeles neighborhoods such as West LA and Sawtelle. Santa Monica Boulevard includes 350 feet of frontage along the southern edge of the Project site. Between Ocean Avenue and 5th Street, Santa Monica Boulevard has a bus-only lane in the eastbound direction, which permits other vehicles for right turns only. Otherwise, there are two vehicle lanes in each direction. In the Downtown, Santa Monica Boulevard features a dense mix of ground floor commercial business with offices or residences above.
- Arizona Avenue is a two-lane (one lane in each direction) east-west roadway. Arizona Avenue is located north of the Project site and is physically separated from the Project site by existing development. In the Downtown, Arizona Avenue features a dense mix of ground floor commercial business with offices or residences above. To the east, particularly beyond Lincoln Avenue, Arizona Avenue becomes predominantly residential. Arizona Avenue hosts regular farmer's markets on Wednesdays and Saturdays, which closes all vehicular access between 3rd Court (alleyway) and 2nd



Street. The Wednesday farmer's market also closes access west to 1st Court, and a portion of 2nd Street (described below). The farmer's market street closures begin in the early morning and end by 2:00 PM. During this time, vehicle traffic is rerouted to parallel streets such as Wilshire Boulevard and Santa Monica Boulevard.

- 2nd Street is a two-lane (one vehicle lane in each direction) north-south roadway that serves provides one-way access from Arizona Avenue to Santa Monica Boulevard. 2nd Street provides approximately 300 feet of frontage along the eastern edge of the Project site. In the Downtown, 2nd Street features a dense mix of ground floor commercial business with offices or residences above, as well as three large City-owned parking structures (#2, #4, and #6). North of Wilshire Boulevard, 2nd Street is predominantly residential. 2nd Street continues south as Main Street at the intersection with Colorado Avenue. A portion of 2nd Street is also closed on Wednesdays to host a farmer's market, which extends between City-owned parking structures #4 (to the south) and #2 (to the north). Vehicle access to both parking structures is maintained during this time, with turn restrictions (i.e., bollards) removed. The farmer's market street closure begins at 7:00 AM or earlier and ends by 2:00 PM. North-south vehicle traffic passing through is rerouted to parallel streets such as Ocean Avenue or 4th Street.
- Ocean Avenue is a four-lane (two vehicle lanes in each direction) north-south roadway that runs along the western edge of the City of Santa Monica. In the Downtown, the east side of Ocean Avenue features mix of ground floor commercial business with offices, hotels or residences above, including several of the taller buildings in the City. The west side of Ocean Avenue, from Colorado Avenue northwards, features Palisades Park, a linear public open space with walking and bicycling paths, trees, and various other recreational amenities. Ocean Avenue provides 300 feet of frontage along the western edge of the Project site.

The Project site has regional vehicle access via nearby arterials and freeways. Regional access is also available by passenger rail in the form of the Metro E Line (Expo) Light Rail. The Pacific Coast Highway (PCH) is located at the foot of the Palisades Bluff at the west of Ocean Avenue. The California Incline (at California Avenue) provides direct access to PCH, and PCH in turn, provides access to Interstate (I-) 10 (Santa Monica Freeway), which is located approximately 0.75 miles southeast of the California Incline, and the Pacific Palisades community to the north. Access between I-10 and the Project site is also available to the south via 2nd Street or Ocean Avenue, which each intersect with Olympic Drive, an east-west connector roadway that intersects with the freeway at 4th Street. I-10 in turn provides regional north-south access via I-405. Highways including PCH, I-10, and I-405 are heavily congested with vehicle traffic for much of the day throughout most of the year. I-10 is heavily congested westbound throughout weekday morning hours and becomes congested eastbound in the afternoons and throughout much of the evening. PCH is particularly heavily congested through the summer months with both local and tourism-based traffic in both directions.

The City's Land Use and Circulation Element (LUCE) defines the street system according to its use by various modes including walking, biking, transit, and automobile. These street types include Boulevard, Special Streets, Downtown Commercial, Neighborhood Commercial, Major Avenue, Secondary Avenue, Minor



Avenue, Industrial Avenue, Neighborhood Street, Shared Street, Parkway, Pathway, Bikeway, Highway, and Alley. City streets, particularly near Downtown, are generally posted with 25 or 30 miles per hour (mph) speed limits. The City streets surrounding the proposed Project are described below based on their designations in the LUCE:

- Boulevard – Boulevards are regional transportation corridors with continuous mixed-use and commercial land uses. Boulevards provide access for all forms of transportation but emphasize transit and walking. Regional automobile traffic is also accommodated along Boulevards in order to minimize regional traffic on parallel local streets. Boulevards in the study area include Wilshire Boulevard, Santa Monica Boulevard, Lincoln Boulevard (Wilshire Boulevard to Pico Boulevard), Ocean Avenue (California Avenue to Pico Boulevard), Main Street (Colorado Avenue to Pico Boulevard), and 4th Street (Wilshire Boulevard to Pico Boulevard). Boulevards typically provide two vehicle lanes in each direction, often have metered on-street parking, and typically do not have bicycle lanes although bicycle routes or “sharrows” may be posted, such as along 4th Street through Downtown.
- Special Streets – These streets are unique and ceremonial streets requiring special consideration. In the study area, the Third Street Promenade is a Special Street between Wilshire Boulevard and Broadway. The Third Street Promenade is a pedestrian-only marketplace (all vehicles, bicycles, skateboards, and scooters/e-scooters are prohibited), bisected by Arizona Avenue and Santa Monica Boulevard with signalized pedestrian crossings.
- Commercial: Downtown – These streets prioritize the pedestrian environment in the Downtown, recognizing that there is often a high level of “competition” among all modes on these streets. Downtown Commercial streets in the study area include Wilshire Boulevard (Ocean Avenue to 11th Street), Arizona Avenue (Ocean Avenue to Lincoln Boulevard), Santa Monica Boulevard (Ocean Avenue to 11th Street), 2nd Street (Wilshire Boulevard to Colorado Avenue), 5th Street (Wilshire Boulevard to Olympic Boulevard), 6th Street (Wilshire Boulevard to Colorado Avenue), 7th Street (Wilshire Boulevard to Olympic Boulevard), and Lincoln Boulevard (Wilshire Boulevard to Pico Boulevard). This designation acts as an “overlay” (e.g., Wilshire Boulevard is both a Boulevard and a Downtown Commercial street in the study area). These streets generally feature metered on-street parking, but the LUCE advises that parking or travel lanes be removed when necessary to reduce transit delay, improve pedestrian quality, or provide bicycle lanes.
- Avenue: Major – These streets serve regional automobile trips and provide access for all modes of transportation. They are designed to discourage regional auto traffic from using Secondary or Minor Avenues. The Major Avenues in the study area include the California Incline and Olympic Boulevard (4th Street to Lincoln Boulevard). Neilson Way is also a nearby Major Avenue, south of Pico Boulevard. These streets are each unique; the California Incline provides only a single vehicle lane in each direction, while Olympic Boulevard between 4th Street and Lincoln Boulevard provides one or two lanes in each direction, on opposite sides of the freeway. These streets typically do not allow on-street parking or stopped vehicles.



- Avenue: Secondary – These streets distribute automobile trips onto Minor Avenues and Neighborhood Streets and often serve regional bicycle trips. Secondary Avenues in the study area include Broadway, Colorado Avenue, and Olympic Drive (Ocean Avenue to 4th Street). These streets are generally a single vehicle lane in each direction. Colorado Avenue is unique in that it hosts the Metro E Line (Expo) Light Rail in the center between 5th Street and 17th Street, allowing only one vehicle lane in either direction with turning restrictions at most intersections and no crossing of the tracks between intersections. West of 5th Street, Colorado Avenue becomes one-way westbound and features the Colorado Esplanade, an extra-wide pedestrian gateway to the Santa Monica Pier and oceanfront. These streets may include on-street parking, such as along Broadway and a short portion of Olympic Drive.
- Avenue: Minor – These streets serve local automobile and bicycle trips. Minor Avenues in the study area include 4th Street (Wilshire Boulevard to northern city limits), 7th Street (Wilshire Boulevard to northern city limits), and 11th Street (Wilshire Boulevard to Ocean Park Boulevard). These streets typically provide a single vehicle lane in each direction and typically provide on-street parking for residents, visitors and loading zones. Some streets, particularly 7th and 11th Streets, provide bicycle lanes.
- Neighborhood Street – These streets primarily serve adjacent buildings. Neighborhood Streets in the study area include Moomat Ahiko Way, 2nd Street (Wilshire Boulevard to Montana Avenue) and other numbered streets not designated as Minor Avenues north of Wilshire Boulevard, Arizona Avenue (Lincoln Boulevard to 11th Street), and Lincoln Boulevard (Wilshire Boulevard to northern City limits). These streets provide a single vehicle lane in each direction and typically have on-street parking for residents, visitors, and loading zones. Some streets have bicycle lanes, such as 2nd Street.
- Parkway – Parkways serve as linear parks incorporating continuous landscaping, recreational bikeways and pedestrian paths. The Pacific Palisades Parkway in the study area is west of Ocean Avenue.

Lane configurations at the study intersections are illustrated in Appendix B1.



EXISTING PUBLIC TRANSIT SERVICE

The City's Big Blue Bus and the Los Angeles County Metropolitan Transportation Authority (Metro) provide a dense network of public transit service throughout the study area. The Project site is directly accessible via transit links between most areas of the City and much of the Los Angeles metropolitan area including Downtown Los Angeles, University of California, Los Angeles (UCLA) / West Los Angeles, Century City, Los Angeles International Airport (LAX), Venice, Culver City. Weekday peak hour transit ridership vary by bus line, as described below, but generally the peak hour falls between 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM. Transit operators adjust bus schedules and headways typically two or three times a year, particularly in the case of Big Blue Bus as service changes coincide with class schedules at Santa Monica Community College and UCLA. During these schedule updates, service is sometimes reallocated between routes to match demand and changing travel patterns; the route descriptions below are from late 2019 and can be considered representative of the existing schedules and headways.

Metro E Line (Expo) Light Rail and Downtown Santa Monica Station

The Project site is located approximately 0.5 mile northwest from the Downtown Santa Monica Station, the western terminus of the Metro E Line (Expo) Light Rail. The Downtown Santa Monica Station is located at 4th Street/Colorado Avenue. Formerly known as the Expo Line or Expo LRT, service began operation in Santa Monica in May 2016, extending the line from Culver City that had opened in 2012, and continuing to Downtown Los Angeles. The Metro E Line (Expo) Light Rail makes 19 stops and connects with other Metro rail service in Downtown Los Angeles. Service operates daily from approximately 4:00 AM through 2:00 AM, with peak headways of 6 minutes in both directions and off-peak headways between 12 and 20 minutes. A new connecting line along Crenshaw Boulevard is under construction and is projected to open in late 2020 or early 2021, providing service south towards LAX and connecting with the Metro C Line (Green). In the future, Metro's "Regional Connector" subway project in Downtown Los Angeles will extend the E Line through downtown and connect with the existing L Line (Gold) towards East Los Angeles, creating a single-seat transit trip that currently requires multiple connections. This project is anticipated to open sometime after 2023.

All Big Blue Bus and Metro lines operating in the Downtown have a connecting stop within a block of the Downtown Santa Monica Station. Bikesharing stations, bicycle lane facilities, and bicycle service facilities are located either adjacent or very close to the station as well.

Public Buses

Figure 3 shows the transit lines and stops near the Project site. There are 13 fixed-route bus lines within 0.25 mile of the Project site:

- Big Blue Bus Line 1 (Santa Monica Boulevard) – Line 1 runs from Venice through Downtown Santa Monica to UCLA. Service headways of approximately 10 minutes are provided during the weekday peak hour and service headways of approximately 15 minutes are provided during weekday off peak



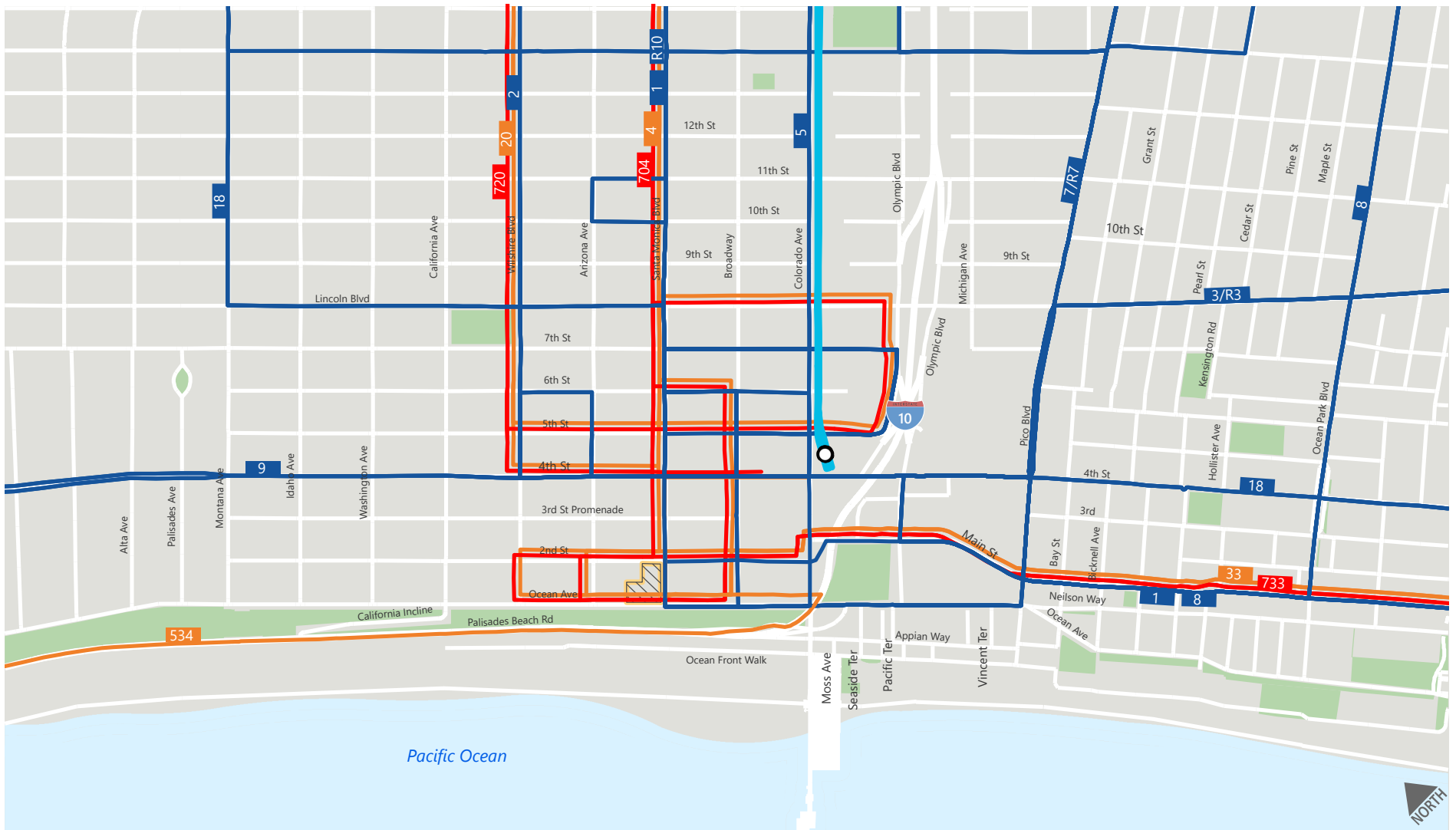
hour and on weekends. The stop closest to the Project site is along Santa Monica Boulevard near 4th Street.

- Big Blue Bus Line 2 (Wilshire Boulevard) – Line 2 runs from the Civic Center through Downtown Santa Monica to UCLA. Headways are approximately 15 to 20 minutes. The stop closest to the Project site is along 4th Street near Santa Monica Boulevard
- Big Blue Bus Line 3 / Rapid 3 (Lincoln Boulevard) – Line 3 runs from the Metro C Line (Green) Aviation Station along Lincoln Boulevard to Downtown via Lincoln Boulevard and 4th Street. Headways are approximately 10 minutes during weekday and weekend peak hours and 15 to 20 minutes during the off peak hour. The stop closest to the Project site is along 4th Street near Santa Monica Boulevard.
- Big Blue Bus Line 5 (Olympic Boulevard) – Line 5 runs between Downtown and Century City via Colorado Avenue and Olympic Boulevard and continues from Century City to the Metro E Line (Expo) Palms Station. Headways are every 20 to 30 minutes during the weekdays. The stop closest to the Project site is along 3rd Street near Santa Monica Boulevard.
- Big Blue Bus Line 7 / Rapid 7 (Pico Boulevard) – Line 7 runs from 6th Street/Broadway in Downtown to Rimpau Transit Center via Pico Boulevard. In the study area, Line 7 provides service with 10-minute headways during weekday peak hours and 15 minutes on weekends. The stop closest to the Project site is along 4th Street near Colorado Avenue.
- Big Blue Bus Line 8 (Ocean Park Boulevard) – Line 8 runs from 7th Street/Olympic Boulevard through Downtown to UCLA via Main Street, Ocean Park Boulevard, National Boulevard, and Westwood Boulevard. In the study area, Line 8 operates on Santa Monica Boulevard and Broadway with headways of 15 to 30 minutes during the weekday peak hours and 30 minutes during the weekend peak hour. The stop closest to the Project site is along 4th Street near Broadway.
- Big Blue Bus Line 9 (Pacific Palisades) – Line 9 runs from the Civic Center through downtown Santa Monica to Pacific Palisades. In the study area, Line 9 operates on 4th Street with headways of 30 minutes during the weekday and weekend peak hours. The stop closest to the Project site is along 4th Street near Wilshire Boulevard.
- Big Blue Bus Rapid 10 (Downtown LA Freeway Express) – Rapid 10 provides express service via the I-10 (Santa Monica Freeway) from Santa Monica to Downtown Los Angeles. This line operates with headways of approximately 30 minutes during the weekday peak hours. This line does not operate on weekends. The line provides limited-stop pick-up or drop-off in the peak direction along Santa Monica Boulevard and Bundy Drive. The bus stop closest to the Project site is along Santa Monica Boulevard near 4th Street.
- Big Blue Bus Line 18 – Line 18 runs from Marina del Rey to UCLA through Downtown on 4th Street. The line serves Venice neighborhoods, Montana Avenue in Santa Monica, Brentwood, and the VA Hospital. Headways are approximately every 30 minutes throughout the day on weekdays and weekends. The stop closest to the Project site is along Santa Monica Boulevard near 4th Street.



- Metro Line 4 / Rapid 704 (Santa Monica Boulevard) – Line 4/704 runs from Downtown Santa Monica to Downtown Los Angeles via Santa Monica and Sunset Boulevards. Daytime service on line 704 is Rapid (limited stop) service with 15-minute headways throughout the day. Off-peak local service on Santa Monica Boulevard in the study area with headways of 15 to 30 minutes and is provided overnight when Big Blue Bus Line 1 is not operating. The stop closest to the Project site is on Santa Monica Boulevard at 4th Street.
- Metro Line 20 / Rapid 720 (Wilshire Boulevard) – Line 20/720 operates on Wilshire Boulevard between the City and Downtown Los Angeles. Rapid 720 service is limited-stop operating throughout the day with 10-minute headways in the peak hours and peak directions and approximately 15- to 20-minute headways at other times. Overnight, local service on Line 20 operates on approximately 20- to 30-minute headways after Big Blue Bus Line 2 ceases operation. The stop closest to the Project site along 2nd Street near Wilshire Boulevard.
- Metro Line 33 / Rapid 733 (Venice Boulevard) – Line 33/733 provides service on Venice Boulevard and Main Street between the City and Downtown Los Angeles. The Rapid 733 operates with 15- to 20-minute headways throughout the day. Line 33 extends local service along Main Street to Santa Monica from Venice during the late evening and overnight periods. The closest stop to the Project site is along 2nd Street near Santa Monica Boulevard.
- Metro Line 534 (Malibu) – Line 534 operates local service between Downtown and Malibu along PCH. Service headways are approximately 20 to 40 minutes throughout the day. The closest stop to the Project site is along Santa Monica Boulevard near Ocean Avenue.





Transit Lines

- Big Blue Bus
- Expo Line
- Metro Rapid
- Metro Local



Figure 1
Ocean Avenue EIR - Existing Transit

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Bicycle Network

The Downtown provides a dense network of bicycle facilities including some immediately adjacent to the Project site. Bicycle lanes extend in both directions on 2nd Street from Montana Avenue and continuing onto Main Street to the southern City limits. Ocean Avenue is also a highly popular north-south bikeway with lanes extending the length of the roadway. Arizona Avenue features an east-west bikeway with lanes that extend to the City limits and continue into Los Angeles. Based on existing bicycle count data collected in 2017 and 2018, bike volumes on Ocean Avenue can number between 200 and 300 in the PM peak hour in the summer tourist season. On 2nd Street and Arizona Avenue near the Project site, bicycle volumes were around 100 during the PM peak hour. The following streets near the Project site have marked bicycle lanes separating bicyclists from vehicles:

- Ocean Avenue between San Vicente Boulevard and Bicknell Avenue
- 2nd Street between Montana and Colorado Avenue, serving the City's Bike Center
- Main Street between Colorado Avenue and the Santa Monica southern City boundary
- 6th Street between Montana Avenue and Colorado Avenue
- 7th Street between Wilshire Boulevard and Olympic Boulevard
- Broadway between 5th Street and Centinela Avenue
- California Avenue between Ocean Avenue and 26th Street
- The California Incline includes a two-way cycletrack (physically separated from vehicle traffic, although partially shared with pedestrians), with a connecting bridge across PCH for beach access
- Arizona Avenue between Ocean Avenue and the eastern City limit
- Colorado Avenue between Ocean Avenue and 5th Street (physically separated cycletrack from both vehicles and pedestrians)

In addition to these facilities, the City has recently marked various streets in the Downtown area as shared-vehicle/bicycle lanes and included bicycle detection zones at signalized intersections. These lanes have been painted with "sharrow" markings. Streets with these markings include 4th Street, Broadway, and Colorado Avenue. Additional designated future bicycle routes with shared lane marking are proposed in the City's 20-Year Bicycle Implementation Plan. A number of intersections in Downtown have also been equipped with bicycle detection cameras.

Bicycle Parking

Bicycle parking is available throughout the study area, including in many parking structures, on-street racks, and at public and private facilities. For example, indoor bicycle parking and lockers are provided in City-owned parking structures #1, #3, #5, #6, and #7 in Downtown. The City also continues to install racks throughout the Downtown. In addition, the Bike Center, located on Colorado Avenue at parking structure #8 of the Santa Monica Place Mall provides secure bicycle parking and a variety of mobility services,



including retail, bicycle repair, bicycle rental, attended bicycle parking, public information on alternative transportation, and a variety of additional related service.

Bike Share

The City also offers the Breeze Bike Share service, which allows residents, visitors, and employees to ride a public bicycle for their travel needs within the City. The bikeshare program makes several hundred "smart" bicycles available at more than 80 stations Citywide including Downtown, and in Venice in the City of Los Angeles.

Pedestrian Facilities

Sidewalks are generally present on all streets throughout the Downtown. Generally, sidewalks throughout downtown are a minimum of 10 feet wide, with many stretches of much wider sidewalks depending on the street and block. A review of existing (2017 and 2018) pedestrian counts shows that hourly pedestrian volumes at Ocean Avenue and Santa Monica Boulevard range between 200 to over 800 in the AM and PM peak hours. Pedestrian activity can be even higher on peak summer tourism days at the busiest intersections, particularly those connecting the Downtown Santa Monica Station at 4th Street with the oceanfront and the Santa Monica Pier. Adjacent to the Project site, the sidewalks on 2nd Street, Arizona Avenue, and Santa Monica Boulevard average approximately 12 feet in width. Sidewalks on Ocean Avenue average approximately 20 feet in width.

In 2016, the City converted pedestrian crossings and signals at the following Downtown intersections to "scramble" types, in which pedestrians are given an exclusive phase to cross in any direction while vehicles hold:

- Ocean Avenue & Colorado Boulevard
- 2nd Street & Wilshire Boulevard
- 2nd Street & Arizona Avenue
- 2nd Street & Santa Monica Boulevard
- 2nd Street & Broadway
- 2nd Street & Colorado Avenue
- 3rd Street & Wilshire Boulevard
- 4th Street & Wilshire Boulevard
- 4th Street & Arizona Avenue
- 4th Street & Santa Monica Boulevard
- 4th Street & Broadway
- 4th Street & Colorado Avenue

Santa Monica also recently updated many other traffic signals in the study area to include a "leading pedestrian interval" (LPI), which holds all vehicle movements (red signal) for several seconds at the start of a pedestrian phase to improve safety by giving pedestrians a head start and improve their visibility to



motorists. Signals (other than those listed above) along Wilshire Boulevard, Ocean Avenue, and elsewhere have been updated with LPIs since 2017. The new LPI timings are incorporated in this analysis.

Signalized intersections throughout the study area have marked or textured crosswalks and pedestrian countdown signals. Signalized pedestrian walk signals are either automatic at the intersection or actuated by pedestrians by push-button. All intersections have accessible curb ramps.

OTHER TRANSPORTATION CHOICES

Shared Mobility Technologies

The growth of privately-operated Transportation Network Companies (TNCs) like Lyft and Uber has also changed the way people move in and around the City. TNC's provide app-based platforms to connect passengers with drivers who use personal, non-commercial vehicles. Lyft and Uber have become the most recognized and ubiquitous forms of shared mobility. Research around the nation in recent years suggests that usage of Lyft and Uber is generating an increase in vehicle traffic.³ Other research has suggested this result is in part because many users are making trips they would not have made previously, and in some cases replacing transit trips.

Since late 2017, the City has seen the burgeoning of dockless mobility devices, including Bird and Lime electric scooters (e-scooters), on City streets. These dockless mobility devices become increasingly popular in the City. Dockless systems allow scooters and bicycles to be left in any location. In June 2018 the City adopted new regulations to address safety concerns associated with dockless mobility devices. Santa Monica City Council unanimously approved a 16-month pilot program (which was extended to June 2020) for dockless, shared mobility devices, including electric scooters and bicycles. The pilot is intended to inform the development of long-term policy solutions to expand sustainable mobility options equitably while protecting public safety on City streets and sidewalks. The City's program has included rules and regulations for the permitting and operation of dockless mobility devices. The City has experimented with stenciling "drop zones" on wide sidewalks, where users are encouraged to park when they finish a trip, to reduce sidewalk clutter and prevent obstructions to the sidewalk, which can significantly impact the Americans with Disabilities Act (ADA) provisions for providing clear path of travel. The City also worked with permitted operators to designate sensitive high-pedestrian areas as "no-ride" zones, including the Third Street Promenade and Palisades Park.

³ Pangilinan, Chris. "Learning more about how our roads are used today". *Medium.com* August 5, 2019 <https://medium.com/uber-under-the-hood/learning-more-about-how-our-roads-are-used-today-bde9e352e92c>
<https://drive.google.com/file/d/1FIUskVkj9IsAnWJQ6kLhAhNoVLjFdx3/view>



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The e-scooters are included in existing count data as bicycles, but no assumption of changes to mobility behavior are included in the analysis given the new and rapidly changing circumstances as well as lack of available data.



EXISTING YEAR (2017) INTERSECTION LEVELS OF SERVICE

The following section describes Existing Year (2017) peak hour traffic volumes at the 40 study intersections, the methodology used to analyze operating conditions at the intersections and resulting LOS for the selected study intersections. LOS is a method for characterizing vehicle delay at intersections and on roadways accounting for measures such as speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Existing Traffic Volumes

The most recent traffic volume count data was collected in 2017 by the City of Santa Monica and Fehr & Peers. Counts were collected in the fall (when school was in session) for weekday AM and PM peak hours and in the summer for weekend midday peak hour (additional weekend counts were collected in 2018 for two intersections that were not collected in 2017 and are considered comparable in volume to nearby 2017 counts). The highest 1-hour volume in each period at each intersection was selected for use in this study, providing a conservative, worst-case analysis for delay-based intersection LOS. The existing traffic volumes for the analyzed peak hours and the lane geometry of each intersection are shown in Appendix B1.

Level of Service (LOS) Methodology/Definition

In accordance with the City's adopted impact significance criteria, the "Operational Analysis" method from the HCM (Transportation Research Board 2010) was employed to perform signalized intersection LOS analysis at all signalized study intersections.

The Operational Analysis method from the HCM (Transportation Research Board 2010) determines two key operating characteristics of signalized intersections. The first characteristic is the average stopped delay experienced per vehicle. The second is the volume-to-capacity (V/C) ratio at intersections. Both metrics are based on the amount of traffic traveling through the intersection, the turning movements of that traffic, the lane geometries, and other factors affecting capacity such as pedestrian volumes at the street crosswalks. These characteristics are used to evaluate the operation of each signalized intersection, which is described generally in terms of LOS.

LOS categories range from excellent, nearly free-flow traffic at LOS A, to overloaded, stop-and-go conditions at LOS F. Table 2 provides LOS definitions for signalized intersections using the Operational Analysis method from the HCM (Transportation Research Board 2010). The LOS definitions and ranges of delay shown in this table represent average conditions for all vehicles at an intersection across an entire hour. Delays longer than the average condition are experienced by motorists on certain movements and/or during peak times within the peak hour.



All of the 40 study intersections are signalized. Of these intersections, 33 are classified as Arterial intersections, and 7 are classified as Collector intersections.⁴ The City's adopted criteria has designated LOS D as the minimum desirable LOS at arterial intersections and LOS C as the minimum desirable LOS at collector street intersections. The minimum desirable LOS – the design condition – allows for some queuing and delays at intersections during the weekday and weekend midday peak hours. At intersections operating at an undesirable LOS, delays and queuing are greater than what is considered acceptable.

Existing Year (2017) Levels of Service

The results of the analysis of weekday AM and PM and weekend midday peak hour conditions at the study intersections using the Operational Analysis method of the HCM 2010 are summarized in Table 2. As shown, 7 of the 40 study intersections currently operate at poor (LOS E) or failure (LOS F) during at least one of the analyzed peak hours under the Existing Year (2017) traffic conditions:

1. Palisades Beach Road & California Incline (LOS E in the AM and weekend midday peak hour)
2. Ocean Avenue & California Avenue (LOS F in the PM and weekend midday peak hour)
11. 2nd Street & Wilshire Boulevard (LOS E in the PM, LOS F in the weekend midday peak hour)
13. 2nd Street & Santa Monica Boulevard (LOS F in the PM, LOS E in the weekend midday peak hour)
16. Main Street & Olympic Drive (LOS F in the AM, LOS E in weekend midday peak hour)
38. Lincoln Boulevard & Colorado Avenue (LOS E in the AM peak hour)
39. Lincoln Boulevard & I-10 Westbound Off-Ramp (LOS F in the AM peak hour)

⁴ Functional street classifications used with respect to LOS are based on the City's previous Circulation Element. The 2010 LUCE has adopted a different typology for streets in the City, but the significance criteria have not yet been revised.



**TABLE 1
 LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS
 HCM 2010 METHODOLOGY**

Level of Service	Average Stopped Delay per Vehicle (seconds)	Definition
A	≤ 10	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	> 10 and ≤ 20	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	> 20 and ≤ 35	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	> 35 and ≤ 55	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	> 55 and ≤ 80	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 80	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.



**TABLE 2
SUMMARY INTERSECTION LEVEL OF SERVICE
CITY OF SANTA MONICA - HCM 2010 METHODOLOGY**

NO.	INTERSECTION	CLASS	PEAK HOUR	EXISTING (2017)		
				V/C	DELAY*	LOS
1	PALISADES BEACH ROAD & CALIFORNIA INCLINE	A	AM	1.347	77	E
		A	PM	0.890	37	D
		A	WKND	1.121	79	E
2	OCEAN AVENUE & CALIFORNIA AVENUE	A	AM	0.798	54	D
		A	PM	1.031	**	F
		A	WKND	1.109	**	F
3	OCEAN AVENUE & WILSHIRE BOULEVARD	A	AM	0.291	12	B
		A	PM	0.383	22	C
		A	WKND	0.388	27	C
4	OCEAN AVENUE & ARIZONA AVENUE	A	AM	0.253	7	A
		A	PM	0.360	13	B
		A	WKND	0.345	13	B
5	OCEAN AVENUE & SANTA MONICA BOULEVARD	A	AM	0.295	9	A
		A	PM	0.435	30	C
		A	WKND	0.470	41	D
6	OCEAN AVENUE & BROADWAY	A	AM	0.345	7	A
		A	PM	0.539	34	C
		A	WKND	0.559	39	D
7	OCEAN AVENUE & COLORADO AVENUE	A	AM	0.357	24	C
		A	PM	0.491	42	D
		A	WKND	0.439	33	C
8	OCEAN AVENUE & MOOMAT AHIKO WAY	A	AM	0.436	25	C
		A	PM	0.520	24	C
		A	WKND	0.447	25	C
9	OCEAN AVENUE & OLYMPIC DRIVE	A	AM	0.400	11	B
		A	PM	0.543	14	B
		A	WKND	0.523	33	C
10	OCEAN AVENUE & PICO BOULEVARD	A	AM	0.489	20	C
		A	PM	0.560	39	D
		A	WKND	0.480	30	C
11	SECOND STREET & WILSHIRE BOULEVARD	A	AM	0.328	30	C
		A	PM	0.379	64	E
		A	WKND	0.617	**	F
12	SECOND STREET & ARIZONA AVENUE	C	AM	0.308	29	C
		C	PM	0.387	29	C
		C	WKND	0.344	29	C
13	SECOND STREET & SANTA MONICA BOULEVARD	A	AM	0.360	29	C
		A	PM	1.007	80	F
		A	WKND	0.789	60	E
14	SECOND STREET & BROADWAY	C	AM	0.341	28	C
		C	PM	0.270	27	C
		C	WKND	0.328	29	C
15	SECOND STREET & COLORADO AVENUE	A	AM	0.283	35	C
		A	PM	0.307	35	C
		A	WKND	0.362	36	D
16	MAIN STREET & OLYMPIC DRIVE	C	AM	0.679	94	F
		C	PM	0.362	22	C
		C	WKND	0.588	71	E
17	MAIN STREET & PICO BOULEVARD	A	AM	0.535	25	C
		A	PM	0.433	25	C
		A	WKND	0.512	29	C
18	FOURTH STREET & WILSHIRE BOULEVARD	A	AM	0.280	27	C
		A	PM	0.285	28	C
		A	WKND	0.317	28	C
19	FOURTH STREET & ARIZONA AVENUE	A	AM	0.295	26	C
		A	PM	0.343	29	C
		A	WKND	0.352	29	C
20	FOURTH STREET & SANTA MONICA BOULEVARD	A	AM	0.285	23	C
		A	PM	0.266	28	C
		A	WKND	0.296	29	C

21	FOURTH STREET & BROADWAY	A	AM	0.377	34	C
		A	PM	0.472	39	D
		A	WKND	0.462	40	D
22	FOURTH STREET & COLORADO AVENUE	A	AM	0.281	15	B
		A	PM	0.400	21	C
		A	WKND	0.392	21	C
23	FOURTH STREET & I-10 WB OFF-RAMP	A	AM	0.681	37	D
		A	PM	0.557	29	C
		A	WKND	0.440	26	C
24	FOURTH STREET & I-10 EB ON-RAMP	A	AM	0.552	39	D
		A	PM	0.542	24	C
		A	WKND	0.514	43	D
25	FIFTH STREET & WILSHIRE BOULEVARD	A	AM	0.275	16	B
		A	PM	0.384	17	B
		A	WKND	0.379	15	B
26	FIFTH STREET & ARIZONA AVENUE	C	AM	0.262	20	B
		C	PM	0.291	21	C
		C	WKND	0.446	24	C
27	FIFTH STREET & SANTA MONICA BOULEVARD	A	AM	0.271	24	C
		A	PM	0.356	22	C
		A	WKND	0.348	23	C
28	FIFTH STREET & BROADWAY	C	AM	0.330	24	C
		C	PM	0.359	22	C
		C	WKND	0.379	21	C
29	FIFTH STREET & COLORADO AVENUE	A	AM	0.297	21	C
		A	PM	0.387	22	C
		A	WKND	0.378	23	C
30	SIXTH STREET & ARIZONA AVENUE	C	AM	0.234	17	B
		C	PM	0.350	20	B
		C	WKND	0.360	15	B
31	SIXTH STREET & SANTA MONICA BOULEVARD	A	AM	0.298	14	B
		A	PM	0.375	17	B
		A	WKND	0.468	17	B
32	SEVENTH STREET & ARIZONA AVENUE	C	AM	0.295	19	B
		C	PM	0.323	20	B
		C	WKND	0.381	20	B
33	SEVENTH STREET & SANTA MONICA BOULEVARD	A	AM	0.336	18	B
		A	PM	0.352	18	B
		A	WKND	0.397	20	C
34	LINCOLN BOULEVARD & WILSHIRE BOULEVARD	A	AM	0.436	22	C
		A	PM	0.435	22	C
		A	WKND	0.487	22	C
35	LINCOLN BOULEVARD & ARIZONA AVENUE	A	AM	0.882	47	D
		A	PM	0.700	30	C
		A	WKND	0.635	28	C
36	LINCOLN BOULEVARD & SANTA MONICA BOULEVARD	A	AM	0.474	24	C
		A	PM	0.555	26	C
		A	WKND	0.576	29	C
37	LINCOLN BOULEVARD & BROADWAY	A	AM	0.533	28	C
		A	PM	0.574	29	C
		A	WKND	0.622	32	C
38	LINCOLN BOULEVARD & COLORADO AVENUE	A	AM	0.499	64	E
		A	PM	0.483	49	D
		A	WKND	0.584	44	D
39	LINCOLN BOULEVARD & I-10 WB OFF-RAMP	A	AM	0.941	88	F
		A	PM	0.677	39	D
		A	WKND	0.815	51	D
40	LINCOLN BOULEVARD & I-10 EB ON-RAMP	A	AM	0.797	35	D
		A	PM	0.541	30	C
		A	WKND	0.750	36	D
<p>* Average stopped delay per vehicle, in seconds.</p> <p>** Indicates oversaturated conditions. Delay cannot be calculated.</p> <p>Arterial intersection</p> <p>Collector intersection</p>						

3. TRAFFIC FORECASTS

TRAFFIC PROJECTIONS

Travel Demand Forecasting Model (TDFM) Projections

The LUCE provides a framework for integrating land use and transportation to reduce vehicle trips; encourage walking, bicycling and transit use; and create active, pedestrian-oriented neighborhoods. The LUCE establishes the goal of achieving no net new PM peak hour vehicle trips generated within the City. There are three ways that trip generation rates are reduced in response to future conditions: the D's (i.e., development density, diversity, destination),⁵ the Metro E Line (Expo) Light Rail, and LUCE Transportation Demand Management (TDM) strategies.

As part of the LUCE, the City developed its first comprehensive, Citywide TDFM. The City's TDFM was calibrated to a base year of 2013, based on 2013 land use data and 2013 traffic counts. The City's land use data is supplemented by Southern California Association of Governments (SCAG) traffic analysis zone (TAZ)-based data for areas in the City of Los Angeles bordering the City of Santa Monica. The City's TDFM forecasts future conditions for the City's transportation network in the form of traffic volumes for daily, as well as weekday AM, weekday PM, and weekend midday peak hours. The model contains the major roadways in the City and considers the trip reduction effects of walking, bicycling, and transit, including the Metro E Line (Expo) Light Rail. The model also includes all identified development projects and street network changes. Additional details are provided in Appendix C.

The City's TDFM contains several enhancements that allow it to capture the effects of land use and circulation element policy initiatives on traffic congestion. These enhancements include the effects of sustainable development patterns (e.g., mixed-use and transit-oriented development), urban streetscape design factors, alternative transportation networks, parking pricing and management, and TDM programs.

The City's TDFM outputs forecasted traffic volume estimates for intersections in the study area. These forecast volumes are loaded into the City's Vistro database for intersection delay-based LOS analysis. PTV Vistro is a software tool that evaluates intersection delay based on traffic turning volumes, bicyclists, and pedestrians at intersections.

⁵The D's are a simple means of quantifying the transportation benefits of smart growth. They predict reductions in per-capita vehicle trips and miles in response to increases in development density, diversity, design and destination and other patterns within a region.



Approval Year and Future Year Traffic Conditions

To evaluate the potential impacts of the proposed Project on intersections for the surrounding street system, it was necessary to develop estimates of Approval Year (2020) and Future Year (2025) traffic conditions in the area both without and with Project-generated vehicle trips:

- To develop the Approval Year (2020) No Project traffic conditions, the land use file in the TDFM was updated to include the development projects with the model area that were completed or anticipated to be completed between the time of the model base year (2013) and Approval Year (2020). The model forecast informs the travel pattern changes, which are then applied to the Existing Year (2017) to develop the Approval Year (2020) No Project traffic conditions. These projections provide the baseline for the Approval Year (2020) Plus Project traffic impact analysis. Appendix D1 lists the development projects included in the Approval Year (2020) land use forecasts.
- To develop the Future Year (2025) No Project traffic conditions, the land use file in the TDFM was updated to include the list of approved and pending projects. These projects are conservatively assumed to all be completed between 2013 and Future Year (2025). Similar to the Approval Year (2020) traffic conditions, land use and through vehicle trips outside the City were linearly interpolated. These projections provide the baseline for the Future Plus (2025) Plus Project traffic impact analysis. Appendix D2 lists the development projects included in the Future Year land use forecasts.
- The traffic generated by the proposed Project was estimated and assigned to the surrounding street system. The TDFM was run to provide information on trip distribution patterns for retail, residential and other land uses in this part of the City and that information was used as a guide to assign Project-generated vehicle trips to the roadway network. The Project-generated vehicle trips were added to the Approval Year (2020) No Project traffic conditions and Future Year (2025) No Project traffic conditions to form the Approval Year (2020) Plus Project and Future Year (2025) Plus Project traffic conditions respectively.

Once these traffic conditions were developed, analyses were conducted to determine the effect of the proposed Project on study area intersections. The difference between No Project and Plus Project traffic conditions represents the incremental changes in traffic attributable to the proposed Project.



TRIP GENERATION ESTIMATES

Santa Monica Trip Generation Rates

The City is generally characterized by compact urban development, high levels of public transit service, walkable and bicycle-friendly streets, and employer-sponsored TDM programs. The unique local characteristics of the City (e.g., compact density, availability of transit, diversity of land uses) require the development of specific trip generation rates. These City-specific trip generation rates are more appropriate than standard Institute of Transportation Engineers (ITE) trip generation rates, which are more reflective of suburban locations.

Local trip generation rates were developed and calibrated for existing conditions as part of the City's TDFM development for a variety of land use types, including residential, retail, and restaurant. As part of the model development, these "existing" trip generation rates were initially based on local residential trip generation surveys, the SCAG regional model, the San Diego Association of Governments' (SANDAG) trip generation survey, models in similar areas, and *Trip Generation, 8th Edition* (ITE 2010). The rates were then modified to account for local conditions based on counts, production-to-attraction balancing, and the difference between ITE and model land use definitions.

The existing City trip generation rates are unique to the City's TDFM, and they are ultimately based on the results of model calibration and validation. Two sets of rates were developed reflecting the different levels of vehicle trip reduction effectiveness for different areas of the City. The first includes areas of the Downtown and the Special Office District, which are determined to have lower trip generation rates through calibration and validation of the City's TDFM (reflecting characteristics such as higher built environment density, numerous transit lines, and a greater share of pedestrian trips). The second rate includes the remainder of the City.

As part of the development of the TDFM, existing calibrated trip generation rates were modified to reflect the effectiveness of the TDM/trip reduction strategies required by the City (and consistent with what was envisioned in the LUCE). Since the City's trip generation rates assume a robust TDM program, the Applicant will be required to prepare and implement a TDM plan that achieves the targeted levels of vehicle trip reductions as set forth in the Development Agreement.

Project Trip Generation

Residential (Affordable Housing), Retail, and Restaurant Trip Generation

Trip generation rates for the new residential, retail, and restaurant uses are based on Table 18 of the *Santa Monica Travel Demand Forecasting Model Trip Generation Rates*, so that the rates account for the proximity to the Downtown Santa Monica Station. The inbound-outbound split of trips in each peak hour is applied based on *Trip Generation Manual, 10th Edition* (ITE 2017). The inbound/outbound splits for residential land



use are from #220 Apartments; the restaurant use are from #932 High-Turnover Restaurant; the retail use are applied from #820 Shopping Center.

Cultural Uses Trip Generation

The trip generation for this land use was sourced from trip generation rates that were developed for six museum/cultural use spaces in California, including a range of types such as art museums, historical museums, and children's museums, and a variety of sizes and visitor levels. The six museums include the Los Angeles County Museum of Art (LACMA), the Museum of Tolerance, the California African-American Museum, the HABITOT Children's Museum in the City of Berkeley, the Santa Barbara Children's Science Museum (MOXI), and the Orange County Museum of Art. The sources for these rates are documented in the references for this study. The rates and in/out splits for all six museums were averaged together to develop a conservative estimate for this use in the absence of a specific program identified for the Cultural Use Campus.

Public Open Space Trip Generation

The trip generation rate for the proposed public open space is from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002). Use of these trip generation rates is consistent with analysis of other recent park and open space projects in the City.

Hotel Trip Generation

The trip generation rate for the hotel was empirically derived from observations at six hotels in the Downtown. The City conducted counts at two hotels in the Downtown in 2017, which Fehr & Peers reviewed and used to refine the rate based on data collection conducted study in 2010 at four hotels in the area to produce updated local trip generation rates for this land use.

Existing Land Use Trip Generation

The Project site is currently occupied by residential units, restaurants, office space, spa, and hair salon. Residential, restaurant, and office trip generation rates from the City's TDFM (described above) were applied to develop trip generation estimates for existing uses. The spa and hair salon trip generation rates were developed using ITE trip generation rates (ITE 2017). The existing trip generation was then subtracted from the proposed Project trip generation to develop a "net new" trip generation.

As shown in Table 3, the proposed Project is expected to generate approximately 186 weekday AM peak hour trips, 248 weekday PM peak hour trips and 259 weekend midday peak hour trips. Taking into account the removal of the existing uses, the proposed Project is expected to generate a net new of approximately 146 trips in the weekday AM peak hour, 146 trips in the weekday PM peak hour and 168 trips in the weekend midday peak hour.



Project Traffic Distribution and Trip Assignment

The trip distribution pattern was informed by a select zone analysis of the Project site using the City's TDFM. Following consultation with City staff, it was determined to be appropriate for distributing new trips generated by the proposed Project. Figure 4 shows the trip distribution pattern.

The information described above was used to assign the project-generated traffic to the study intersections, as shown in Appendix B. All Project-generated trips would use driveways on 1st Court (ingress) and 2nd Street (egress).

Existing Site Access

Vehicular access to the Project site is currently available via 1st Court and driveways on Ocean Avenue and Santa Monica Boulevard. Ingress into the Project site is provided from Arizona Avenue and the alley provides one-way southbound travel between Arizona Avenue and Santa Monica Boulevard. In addition to the buildings housing the existing uses described above, the Project site is currently occupied by two privately operated surface parking lots. One parking lot primarily serves the BOA restaurant on-site. The other is a public parking lot occupying the southeast corner of the Project site, which serves other uses that exist on- and off-site.

Vehicle ingress to the BOA surface parking lot is provided via a curb cut on Ocean Avenue. Vehicle egress from the surface parking is southbound along 1st Court to Santa Monica Boulevard. Vehicle ingress to the public parking lot is accessed via a curb cut on Santa Monica Boulevard, approximately halfway between 1st Court and 2nd Street. An exit at the northwest corner of the parking lot provides southbound egress along 1st Court to Santa Monica Boulevard.

Project Site Access

Under the proposed Project, vehicular access to the Project site would be provided via 1st Court (ingress) and 2nd Street (egress). 1st Court would be rerouted into an "L"-shaped configuration approximately where the alleyway meets the existing parking lot on the southeast corner, turning vehicles traveling south from Arizona Avenue east through a tunnel across the northern portion of the 2nd Street Parcel to 2nd Street. The curb cut on Ocean Avenue would be closed, while the 1st Court egress onto Santa Monica Boulevard would be limited to emergency vehicles only. Figure 2 shows the Project site plan including the re-routed alleyway.

Existing counts were conducted at 1st Court and Santa Monica Boulevard to estimate the number of trips exiting the alley from the BOA surface parking lot, from the public parking lot on-site, and southbound from other uses abutting the alley or trips passing through (e.g., service vehicles).

Existing traffic entering the site via 1st Court at Arizona Avenue and exiting on Santa Monica Boulevard were re-routed to exit via the new project driveway onto 2nd Street, and from there redistributed based on their direction of travel from the current alley.



Based on the applicant's shared parking study, the proposed Project would have the capacity to fully park its residents and visitors on-site. Currently, while there is surface parking available to the existing uses on site, it is assumed that only some of those trips are parking on-site, while others take advantage of Santa Monica's "park-once" philosophy in the Downtown by parking in a nearby public parking structure. Using the existing count data described above, vehicle trips currently parking in the BOA and public lots on the Project site were removed from the network and re-assigned using the proposed Project ingress and egress. The remaining existing trips were assumed to park in three nearby City-owned parking structures or on-street parking along 2nd Street. These trips were also removed from the existing network and reassigned as part of the project traffic using the proposed ingress and egress.

Vehicular egress from the Project site's subterranean parking garage would be provided via a driveway out to 2nd Street adjacent to the new eastern leg of alley through the tunnel across the 2nd Street Parcel. Vehicular egress from both the re-routed alley and the Project site driveway would be restricted to right-turn only onto 2nd Street. Although the proposed Project egress is restricted to right-turn only, there are two existing driveways on 2nd Street directly across from the proposed driveway that have no restrictions on exiting turns. The proposed Project driveway design must also account for the relocation or removal of on-street parking to provide adequate visibility towards the southbound direction (looking north from the driveway) for exiting drivers. Currently, on-street parking adjacent to the proposed driveway is a mix of reserved layover space for Metro buses, short-term metered parking and curbside valet parking. The City staff review all proposed site plans for safety and possible geometric hazards for vehicle-vehicle, vehicle-pedestrian, and vehicle-bicycle conflicts. The EIR will evaluate the potential for a CEQA "geometric hazards" impact.

As described in Chapter 2, portions of Arizona Avenue (on Wednesdays and Saturdays between 6:00 AM and 2:00 PM) and 2nd Street (on Wednesdays only, during the same period) are closed to host a farmer's market. During these times, through-traffic must use parallel streets. Access to the Project site via 1st Court and egress onto 2nd Street would not be directly affected by the farmer's market, although arriving at 1st Court some trips that might typically use Arizona Avenue from the east would have to divert to Wilshire Boulevard or Santa Monica Boulevard to Ocean Avenue, and then onto Arizona Avenue. This is a regular event with signage and special traffic barriers that are deployed to redirect traffic, including staff to direct limited traffic through 2nd Court across Arizona Avenue during the market. Because the farmer's market closures take place on relatively minor streets in the Downtown grid network and is a known, regular occurrence that does not preclude vehicle access to neighboring development, it does not significantly disrupt the flow of traffic in the area; therefore, it is not analyzed separately in this report.



TRANSPORTATION DEMAND MANAGEMENT PROGRAM REQUIREMENTS

A TDM plan would be required as a condition of approval for the proposed Project, and the applicant would be required to conduct yearly monitoring and reporting. The specific TDM strategies to be implemented by the applicant would be finalized as part of the Development Agreement process with the City; however, based on the City's TDM ordinance and DCP, the following TDM strategies would be implemented at minimum:

TDM Coordinator – A single transportation coordinator would design, manage and update the project's TDM program. Duties would include:

- Setting up a Transportation Management Association (TMA) on site to administer TDM programs
- Maintaining a Transportation Information Center (TIC)
- Facilitating ride-matching online and through data collection and info boards
- Publishing alerts, resolving emergency issues, evaluating programs, and recommending improvements
- Acting as mechanism to distribute commuter incentives
- Producing promotional and survey materials
- Evaluating TDM program effectiveness
- Advocating for improved transit service
- Developing parking management plans
- Facilitating financial support for formation of vanpools and carpools
- Providing discounted transit fares or passes
- Developing bicycle-to-work and walk-to-work promotions
- Coordinating emergency rides home
- Managing preferential parking for high occupancy vehicles (HOVs)

This is a common position for programs that serve a large number of employees and/or residents. The position would require, at a minimum, a part-time coordinator. The applicant may consult with the City for guidance on how other multi-tenant developments have managed TDM programs.

Areawide Transportation Management Association – The applicant would be required to participate in the establishment of a geographic-based TMA that may be defined by the City. TMAs provide employees, businesses and visitors of an area with resources to increase the amount of trips taken by transit, walking, bicycling, and ridesharing. If the City adopts a requirement that a TMA be formed for this geographic area, the applicant shall attend organizational meetings and provide traffic demand data to the TMA. This element would also require the project to provide the TMA with data related to traffic demand, which could help the City to better understand travel behavior at the Project site.



Transit Pass Subsidy – A transit pass subsidy has the potential to be an effective TDM strategy for employees. The Big Blue Bus and Metro lines provide frequent local bus and regional rail transit service near the Project site. For employees, the most efficient way to incentivize the use of transit is to subsidize monthly transit passes. To do this, employers participate in an employer pass program and subsidize a portion of the cost of a monthly transit pass.

Ridesharing (Carpool and Vanpools) – Ridesharing is typically a primary focus of employee TDM strategies. By providing preferential parking for carpools, the TDM program should actively encourage carpooling among employees at the Project site. Most importantly, the TDM program should implement a ridesharing matching service that coordinates potential carpool opportunities. Metro’s CommuteSmart.info website can easily facilitate this service. Offering incentives to carpools is another means of increasing carpool participation.

Parking Pricing – Pricing parking would help to decrease trips. Since free parking acts as a subsidy for trip making by car, allowing parking to be priced according to market rates would encourage the replacement of auto trips by transit, bicycle, and pedestrian trips when possible.

Parking cash out is another price-based tool for making walking, bicycling, and transit more attractive travel options compared to driving. In a parking cash out program, employers offer commuters who forgo their parking spaces the monthly value of those parking spaces. Although the proposed Project may not be mandated to comply with existing parking cash out legislation, the proposed Project could still choose to implement a parking cash out program as part of the TDM plan.

Unbundled Parking – Unbundled parking would mean that parking spaces in the new building would be leased separately from residential units and commercial space and allow residents of nearby buildings to lease these spaces at comparable rates as nearby building tenants.

Guaranteed Ride Home (GRH) – GRH is a commute trip reduction service that provides emergency rides to participating employees who do not have a private automobile available at the office for use. This may alleviate some of the concerns that employees may have when considering not having their own automobile available for use at the office.

Bicycle Facilities – Commuter bicycle facilities such as secure bicycle parking (e.g., short-term and long-term bicycle racks and lockers), and shower and personal locker facilities help reduce peak hour and daily vehicle trips to and from Project sites. In light of providing bicycle facilities as a TDM strategy, the proposed Project would be subject to the most current zoning code for bicycle parking requirements which includes short term for visitors, on site bicycle share for employees, and secure bicycle parking for employees.

Carshare Service – Make a car sharing service available within the project, if such a service is commercially available from a third-party provider on commercially reasonable and feasible terms.



Bicycle Sharing Area – Provide a reasonable amount of publicly-accessible space for a bicycle sharing program station in conjunction with any bicycle sharing program instituted by the City or other operator.

Transportation Information Center and TDM Web Site Information – A TIC is a centrally-located commuter information center where project employees could obtain information regarding commute programs and obtain real-time information for planning travel without using an automobile. A TIC typically provides information about transit schedules, commute planning, ridesharing, telecommuting, bicycle and pedestrian routes and facilities, on-site services, and local-serving businesses.

Wayfinding Signage – Wayfinding signage is visible, useful signage strategically placed in and around a Project site that conveniently directs pedestrians to project elements and major external destinations (e.g., transit stations, theaters, libraries, etc.) and provides information for transportation options (e.g., taxi, transit maps, bicycle sharing, etc.). Typically, pedestrian-oriented signage is posted at major entrance/exit points to the project and at key internal locations.

Commuter Club – This is a workplace organization that provides incentives for employees to choose alternative modes of transportation to-and-from work. In order to become a member, employees agree to use alternative modes of travel (including walk, bicycle, transit, carpool or vanpool) to travel to work for a minimum number of days per week (e.g., 3 days per week). As a member, employees are entitled to various discounts at local businesses, special offers and monthly raffle prizes. These benefits must be determined and negotiated by the applicant.

The Transit Cooperative Research Program (TCRP) Chapter 19 reports that TDM programs are most effective when people have alternatives to auto travel, such as public transit. There may be some variability between land uses on the Project site, but the success of the TDM program will depend on how well it supports those who want to make trips by a means other than driving alone. The proposed Project's TDM strategies will be most effective at reducing peak hour trips when worker shifts begin or end during peak hours. Converting these auto trips into transit, bicycle, or pedestrian trips would directly remove cars from the street during the AM and PM peak hours. In this way, the TDM program can reduce trips for all employees on the Project site – from restaurant workers to retail salespeople to fitness center staff.



Monitoring, Reporting and Enforcement

In compliance with the LUCE, the applicant would be required to implement TDM measures so as to not exceed the trip generation estimates calculated for the Approval Year (2020) and Future Year (2025) as provided in Table 3. In order to ensure that the trip generation estimated in this study would not be exceeded, a period of annual monitoring and reporting would be required as a condition of approval for the proposed Project and would be incorporated into the Development Agreement. The applicant would be required to summarize the results of the trip monitoring program, determine whether trip reduction goals and/or Average Vehicle Ridership (AVR) targets are being achieved, and describe the TDM efforts in place to reduce vehicular trip making in an annual report delivered to the City.

The City, at its discretion, would determine the type of enforcement and may require implementation of additional TDM strategies and possible monetary (or other) penalties if annual monitoring determined that the trip generation estimates are being exceeded and/or AVR targets were not being met.



**TABLE 3
OCEAN AVENUE PROJECT
APPROVAL YEAR (2020) AND FUTURE YEAR (2025) TRIP GENERATION ESTIMATES**

Land Use	Size	Daily Rate	AM Peak Hour			PM Peak Hour			Weekend Midday Pk Hr			Weekday Trips	AM Peak Hour Trips			PM Peak Hour Trips			Weekend Midday Pk Hr Trips		
			Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total	In	Out	Total
PROPOSED PROJECT																					
Residential - Studio Units [a, b]	12 DU	1.49	0.09	23%	77%	0.1	63%	77%	0.1	50%	50%	18	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, b]	55 DU	3	0.18	23%	77%	0.21	63%	77%	0.21	50%	50%	165	2	8	10	8	4	12	6	6	12
Residential - Two-Bedroom Units [a, b]	23 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	118	2	5	7	5	3	8	4	4	8
Residential - Three-Bedroom Units [a, b]	10 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	51	1	2	3	3	1	4	2	2	4
Retail [c]	12.04 KSF	29.31	1.29	62%	38%	1.97	48%	52%	1.97	52%	48%	353	10	6	16	12	12	24	12	12	24
Restaurant [d]	24.07 KSF	78.75	3.50	55%	45%	5.28	62%	38%	5.28	50%	50%	1,896	46	38	84	79	48	127	64	63	127
Cultural Uses [e]	35.50 KSF	7.26	0.68	91%	9%	0.80	15%	85%	1.28	51%	49%	258	22	2	24	4	24	28	23	22	45
Public Open Space [f]	0.63 ACRES	50.00	6.43	50%	50%	4.46	52%	48%	2.32	62%	38%	32	2	2	4	2	1	3	1	0	1
Hotel [g]	120 ROOMS	4.90	0.31	49%	51%	0.34	51%	49%	0.31	50%	50%	588	18	19	37	21	20	41	19	18	37
TOTAL PROJECT TRIPS											3,479	103	83	186	135	113	248	132	127	259	
EXISTING LAND USES																					
Residential - Studio Units [a, h]	12 DU	1.51	0.09	23%	77%	0.11	63%	77%	0.11	50%	50%	18	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, h]	7 DU	3.03	0.19	23%	77%	0.22	63%	77%	0.21	50%	50%	21	0	1	1	1	1	2	1	0	1
Restaurant [i]	12.39 KSF	79.27	0.93	55%	45%	5.50	62%	38%	6.27	50%	50%	982	7	5	12	42	26	68	39	39	78
Commercial Office [j]	14.01 KSF	9.74	0.83	86%	14%	0.91	16%	84%	0.10	54%	46%	136	10	2	12	2	11	13	1	0	1
Medical Office [k]	4.900 KSF	29.22	2.46	78%	22%	2.64	28%	72%	0.48	57%	43%	143	9	3	12	4	9	13	1	1	2
Medical Spa [l]	0.730 KSF	29.22	1.31	51%	49%	3.45	57%	43%	3.19	49%	51%	21	1	0	1	2	1	3	1	1	2
Salon [m]	1.200 KSF	40.00	1.21	100%	0%	1.45	17%	83%	5.08	36%	64%	48	1	0	1	0	2	2	2	4	6
TOTAL EXISTING TRIPS											(1,369)	(28)	(12)	(40)	(52)	(50)	(102)	(46)	(45)	(91)	
NET INCREMENTAL TRIPS											2,110	75	71	146	83	63	146	86	82	168	

Notes: Proposed land uses based on applicant's information and other conversations. Existing land uses were fully occupied in July 2017, when baseline traffic counts were collected. As described in the Santa Monica Travel Demand Forecasting Model (TDFM) Trip Generation Rates, Santa Monica TDM trip generation rates for residential, retail and restaurant space incorporate internal capture and pass-by trips.

[a] It is assumed that the car-ownership per household for studio multi-family residential land use types is zero cars, one-bedroom multi-family residential land use types is one car, while the car-ownership per household for two- bedroom and three-bedroom multi-family residential land use types is two or more cars.

[b] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[c] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #820 Shopping Center, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[d] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[e] Trip generation was sourced from trip generation rates that were developed for six museum/cultural use spaces in Southern California, including a range of types such as art museums, historical museums, and children's museums. The rates and in/out splits for all six museums were averaged together to develop a conservative estimate for this site in the absence of a specific program identified for the cultural use space.

[f] Trip generation rate from "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002.

[g] Trip generation is empirically derived from observations at six other hotels in the downtown Santa Monica area. The trip generation and in/out splits were observed for each hotel on an average weekday during the AM and PM peak hours, and an average weekend midday peak hour while the hotels were near 100% occupancy. The rates and in/out splits reflect the average of all observations.

[h] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

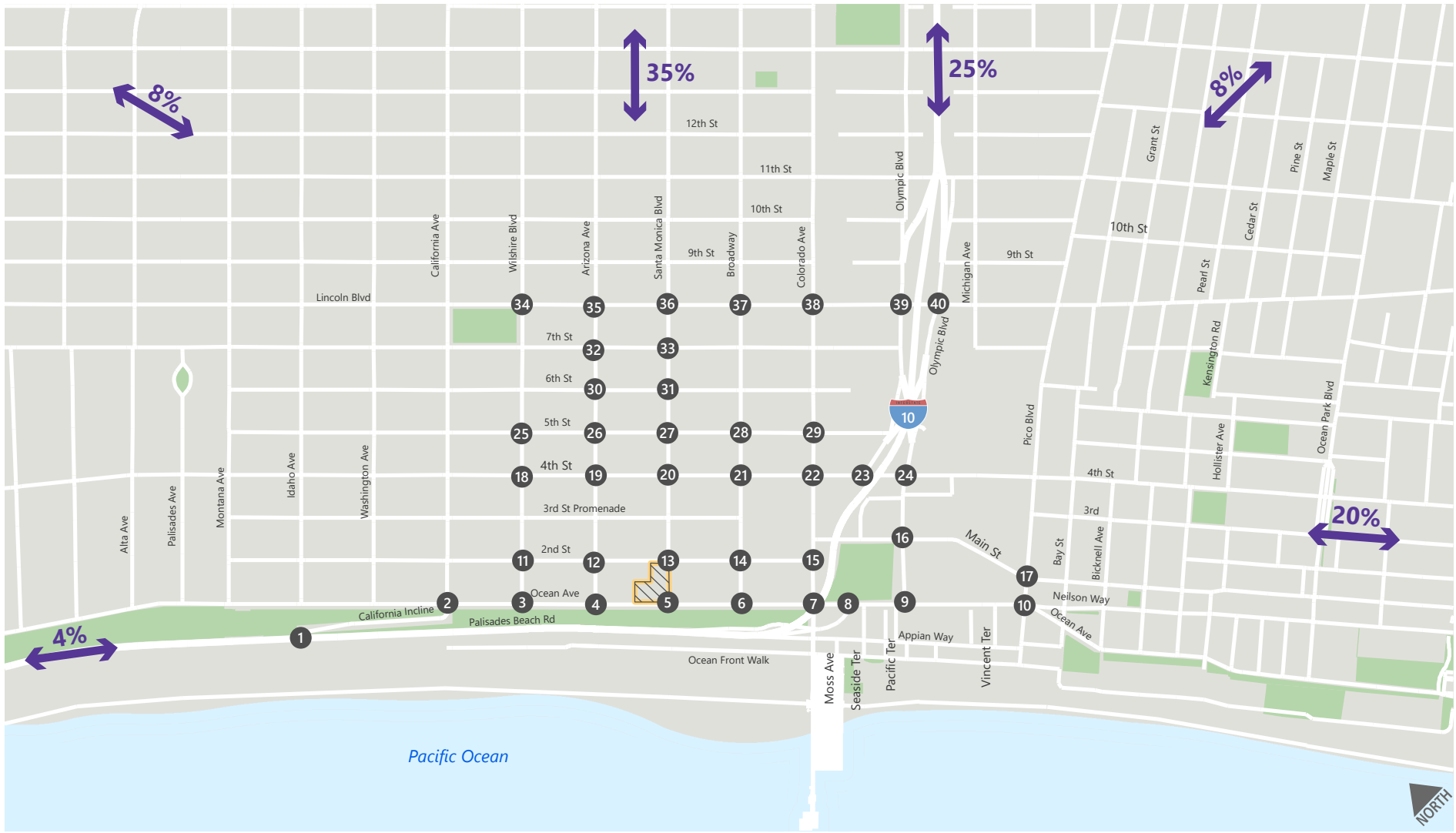
[i] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The AM trip rates are reduced to reflect that most existing restaurants are not open during the AM peak hour, but employees and vendors are likely to be making trips during that time.

[j] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #710 General Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[k] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[l] Trip generation and in/out splits for project land use are applied from #492 Health/Fitness Club, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The daily rate is assumed to be the same as #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[m] Trip generation and in/out splits for project land use are applied from #918 Hair Salon, Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE), 2012. The ITE Trip Generation manual does not include a daily rate. The daily rate is based on a phone survey of the existing salon's average number of daily appointments.



- Study Intersections
- ▨ Project Site



Figure 4
Ocean Avenue EIR - Trip Distribution

FUTURE IMPROVEMENTS ASSUMPTIONS

As part of the adopted DCP, the City envisioned that Wilshire Boulevard would be transformed into a more pedestrian-friendly street. The DCP identified the Wilshire Boulevard streetscape project, which would create widened pedestrian space along this street between Ocean Avenue and 4th Street through a reduction in vehicle lane space. This Wilshire Boulevard improvement is still in the conceptual stages and planning for this improvement has not yet begun. As part of this conceptual improvement, the sidewalk on the south side of Wilshire Boulevard in this segment would be widened to improve the pedestrian environment between the Third Street Promenade and Palisades Park on Ocean Avenue.

Roadway Reconfigurations

The project assumes that there would be a lane reduction on Wilshire Boulevard from two eastbound through lanes between Ocean Avenue and 4th Street to a single eastbound through or shared through-right lane.

Other Improvements

Signal timings at intersections are optimized under Future Year (2025) No Project traffic conditions to balance shifting demand patterns where applicable. Other possible roadway improvements would include the replacement of the Pier Bridge connecting Colorado Avenue with the Santa Monica Pier; however, this pending project has not been finalized, and so no change to the circulation of the Pier area has been assumed.

Bike Improvement Projects

The *City of Santa Monica Bike Action Plan* (October 2011) includes recommended bicycle projects for 5-year implementation and 20-year vision plans. As of 2019, the majority of the 5-year implementation projects have been completed, including those nearest the Project site. The DCP also identified further potential bicycle infrastructure improvements. The following projects, including the following projects in the vicinity of the project study area, are planned in the 20-year vision:

Ocean Avenue Cycle Track

- As called for in the DCP, the City is currently exploring the potential of installing a cycle track on the west side of Ocean Avenue.

Santa Monica Pier Improvements

- Short-term shared lane markings from Ocean Avenue to Santa Monica Pier; include bicycle facilities in the reconstruction of the bridge connecting Downtown with the Santa Monica Pier, which is anticipated within the next several years, and provide a connection from the Santa Monica Pier to the Beach Bike Trail.



Santa Monica Boulevard Bikeway

- Shared lane markings (identified in the *Bike Action Plan* as a green “super-sharrow”) from Ocean Avenue to 6th Street/7th Street.

APPROVAL YEAR (2020) TRAFFIC CONDITIONS

For the Approval Year (2020) analysis, weekday AM peak hour, weekday PM peak hour, and weekend midday peak hour traffic conditions were developed to provide the baseline against which direct impacts associated with the proposed Project were evaluated. The land use file in the City’s TDFM was modified to reflect anticipated near-term development projects that would be implemented through 2020. The City’s TDFM provides a prediction of traffic pattern changes between the model base year (2013) and the Approval Year (2020). These changes are applied to the 2017 traffic counts to develop an Approval Year (2020) No Project traffic conditions. Approval Year (2020) No Project traffic considerations, including lane geometry at each intersection and LOS at each intersection, are shown in Appendix B2 for the analyzed peak hours.

As described above, the traffic conditions associated the proposed Project were developed using the following three steps: estimate the trip generation of the project, determine trip distribution, and assign the project traffic to the roadway system.

Project-generated trips were assigned to the street system and added to the Approval Year (2020) No Project traffic conditions. The Approval Year (2020) Plus Project traffic conditions are shown in Appendix B. The Approval Year (2020) Plus Project traffic conditions include the Project-generated trips as well as the removal of existing trips (shown in Appendix B).

FUTURE YEAR (2025) TRAFFIC CONDITIONS

The City’s TDFM forecasts cumulative traffic conditions for the City’s and surrounding areas of the City of Los Angeles for 2025 and 2030. For consistency with the LUCE, the TDFM was used to forecast Future Year (2025) No Project traffic conditions analyzed in this study. Appendix B shows the Future Year (2025) No Project traffic conditions for the analyzed peak hours. The Future Year (2025) No Project traffic conditions incorporates the assumed future reconfiguration of Wilshire Boulevard between Ocean Avenue and 4th Street (as described in the Future Improvements Assumptions).

Future Year (2025) Year Plus Project traffic conditions represents the Future Year (2025) No Project traffic conditions with the addition of Project-generated trips. The Future Year (2025) Plus Project traffic conditions are shown in Appendix B. The Future Year (2025) Plus Project scenario includes the projected incremental traffic from the development of the proposed Project scenario as well as the shift in existing traffic (shown in Appendix B).



4. TRAFFIC IMPACT ANALYSIS

The previous chapter described sets of traffic conditions - the Approval Year (2020) No Project and Approval Year (2020) Plus Project as well as the Future Year (2025) No Project and Future Year (2025) Plus Project. These traffic conditions were analyzed to determine the Approval Year (2020) and Future Year (2025) operating conditions with and without the addition of Project-generated traffic and to identify the potential impacts of the proposed Project on the surrounding transportation network system. This chapter provides a discussion of the City's impact criteria and methodology used and summarizes the results of the analysis.

CRITERIA FOR DETERMINATION OF A SIGNIFICANT TRAFFIC IMPACT

In 1991, the City established criteria for assessing whether project-related traffic would result in significant impacts on intersection operating conditions using the measure of automobile delay. The thresholds of significance, summarized in Table 4, depends on the classification of the streets at the intersection (e.g., arterial, collector, or local street) and the operating conditions of the intersection under cumulative plus project traffic conditions. Although street classifications were updated in the LUCE, for purposes of this report, streets are classified as arterials, collectors and local streets because these are the categories used in the City's adopted intersection thresholds of significance. The potential significance of a project's impact is measured by either the change in average vehicle delay (measured in seconds) or by a change in the intersection operating conditions to undesirable conditions. If the intersection is projected to operate at LOS F, however, significance is defined in terms of a change in V/C ratio (as calculated by the "Operational Analysis" method from the HCM), since the average vehicular delay cannot be calculated using the "Operational Analysis" method from the HCM if the intersection exhibits oversaturated traffic conditions.

Using the City's previously adopted significance criteria summarized in Table 4, a project would not be considered to have a significant impact at an intersection if, for example, it is on an arterial street operating at LOS D with the addition of project traffic and the incremental change in the average vehicle delay is less than 15 seconds. If the intersection is operating at LOS E after the addition of project traffic and the average vehicle delay increases by any amount, however, this would be considered a significant project impact. All impacts on intersections projected to operate at LOS F are based on the V/C ratio, with project-related increases of 0.005 or greater considered significant.

Based on recent legislative changes in the State of California, environmental impact reports are transitioning away from intersection LOS and vehicular delay as an impact criteria and transitioning to measuring the change in VMT. Lead agencies have a July 1, 2020 deadline for adopting new impact criteria. At the time of this publication, the City has not adopted VMT-based impact criteria. More information on the regulatory changes and the project VMT analysis is included later in this report for informational purposes.



**TABLE 4
SIGNIFICANT IMPACT CRITERIA
ARTERIAL AND COLLECTOR INTERSECTIONS***

CITY OF SANTA MONICA	
BASE SCENARIO	PLUS PROJECT SCENARIO
<p>IF LOS = A, B, OR C</p> <p>== and is a collector street intersection</p> <p>== and is an arterial intersection</p>	<p>SIGNIFICANT IMPACT IF:</p> <p>Average vehicle delay increase is \geq 15 seconds or LOS becomes D, E, or F</p> <p>Average vehicle delay increase is \geq 15 seconds or LOS becomes E or F</p>
<p>IF LOS = D</p> <p>== and is a collector street intersection</p> <p>== and is an arterial intersection</p>	<p>SIGNIFICANT IMPACT IF:</p> <p>Any net increase in average seconds of delay per vehicle</p> <p>Average vehicle delay increase is \geq 15 seconds or LOS becomes E or F</p>
<p>IF LOS = E</p> <p>== and is a collector or arterial intersection</p>	<p>SIGNIFICANT IMPACT IF:</p> <p>Any net increase in average seconds of delay per vehicle</p>
<p>IF LOS = F</p> <p>== and is a collector or arterial intersection</p>	<p>SIGNIFICANT IMPACT IF:</p> <p>HCM V/C ratio net increase is \geq 0.005</p>

Notes:

* Functional street classifications for Santa Monica Intersections in this table are from the City's previous Circulation Element. The 2010 Land Use and Circulation Element (LUCE) has adopted a different typology for streets within the City but the significance criteria have not yet been revised.

APPROVAL YEAR (2020) NO PROJECT INTERSECTION CONDITIONS

The Approval Year (2020) No Project peak hour traffic conditions described in Chapter 3 and shown in Appendix B were analyzed using the methodologies described in Chapter 2 to forecast LOS at the study intersections during the analyzed peak hours. Table 5 provides a summary of the Approval Year (2020) intersection LOS. Detailed Vistro LOS calculation worksheets are provided in Appendix B2.

As shown in Table 5, of the 40 study intersections, the following seven study intersections are projected to operate at LOS E or F during at least one of the analyzed peak hours:

1. Palisades Beach Road & California Incline (LOS E in the AM, LOS F in the weekend midday peak hour)
2. Ocean Avenue & California Avenue (LOS E in the AM, LOS F in the PM and weekend midday peak hours)
11. 2nd Street & Wilshire Boulevard (LOS E in the PM, LOS F in the weekend midday peak hour)
13. 2nd Street & Santa Monica Boulevard (LOS F in the PM and weekend midday peak hours)
16. Main Street & Olympic Drive (LOS F in the AM and weekend midday peak hours)
38. Lincoln Boulevard & Colorado Avenue (LOS E in the AM peak hour)
39. Lincoln Boulevard & I-10 Westbound Off-Ramp (LOS F in the AM peak hour)

APPROVAL YEAR (2020) PLUS PROJECT TRAFFIC IMPACT ASSESSMENT

The Approval Year (2020) Plus Project peak hour traffic volumes were analyzed to determine future operating conditions at the study intersections and to identify specific traffic impacts resulting from the addition of Project-generated trips. The results of this analysis are summarized in Table 5 for comparison with the Approval Year (2020) No Project intersection conditions. At some intersections, the average vehicle delay in the future decreases slightly even as Project-generated trips are added. Under the "Operational Analysis" method from the HCM, intersection delay is a calculation whereby the overall delay is not additive, but rather a weighted average of all movements. Adding trips to some movements which are already congested will increase overall delay but adding trips to movements with available capacity could decrease the average delay value slightly.

Of the 40 study intersections, four study intersections were found to be significantly impacted by the proposed Project:

1. Palisades Beach Road & California Incline (LOS E in the AM, LOS F in the weekend midday peak hour)
2. Ocean Avenue & California Avenue (LOS E in the AM, LOS F in the PM and weekend midday peak hours)
11. 2nd Street & Wilshire Boulevard (LOS F in the weekend midday peak hour)
16. Main Street & Olympic Drive (LOS F in the AM and weekend midday peak hours)



**TABLE 5
APPROVAL YEAR (2020) INTERSECTION LEVEL OF SERVICE AND IMPACT ANALYSIS
CITY OF SANTA MONICA - HCM 2010 METHODOLOGY**

NO.	INTERSECTION	CLASS	PEAK HOUR	APPROVAL NO PROJECT			APPROVAL + PROJECT			V/C OR DELAY CHANGE	SIGNIFICANT IMPACT?
				V/C	DELAY*	LOS	V/C	DELAY*	LOS		
1	PALISADES BEACH ROAD & CALIFORNIA INCLINE	A	AM	1.196	69	E	1.205	71	E	2	Yes
		A	PM	1.008	47	D	1.010	48	D	1	No
		A	WKND	1.203	88	F	1.206	90	F	0.003	No
2	OCEAN AVENUE & CALIFORNIA AVENUE	A	AM	0.937	72	E	0.944	72	E	0	No
		A	PM	1.192	**	F	1.203	**	F	0.011	Yes
		A	WKND	1.252	**	F	1.263	**	F	0.011	Yes
3	OCEAN AVENUE & WILSHIRE BOULEVARD	A	AM	0.299	12	B	0.303	12	B	0	No
		A	PM	0.392	22	C	0.396	22	C	0	No
		A	WKND	0.398	28	C	0.402	28	C	0	No
4	OCEAN AVENUE & ARIZONA AVENUE	A	AM	0.256	7	A	0.260	7	A	0	No
		A	PM	0.367	13	B	0.362	13	B	0	No
		A	WKND	0.356	13	B	0.354	13	B	0	No
5	OCEAN AVENUE & SANTA MONICA BOULEVARD	A	AM	0.303	9	A	0.323	10	A	1	No
		A	PM	0.443	31	C	0.460	33	C	2	No
		A	WKND	0.482	42	D	0.477	43	D	1	No
6	OCEAN AVENUE & BROADWAY	A	AM	0.358	8	A	0.366	8	A	0	No
		A	PM	0.552	37	D	0.553	36	D	-1	No
		A	WKND	0.581	47	D	0.582	46	D	-1	No
7	OCEAN AVENUE & COLORADO AVENUE	A	AM	0.368	25	C	0.380	26	C	1	No
		A	PM	0.511	47	D	0.519	48	D	1	No
		A	WKND	0.456	36	D	0.467	36	D	0	No
8	OCEAN AVENUE & MOOMAT AHIKO WAY	A	AM	0.439	25	C	0.444	25	C	0	No
		A	PM	0.527	24	C	0.528	24	C	0	No
		A	WKND	0.455	25	C	0.456	25	C	0	No
9	OCEAN AVENUE & OLYMPIC DRIVE	A	AM	0.409	11	B	0.414	11	B	0	No
		A	PM	0.548	14	B	0.548	14	B	0	No
		A	WKND	0.536	35	C	0.542	35	C	0	No
10	OCEAN AVENUE & PICO BOULEVARD	A	AM	0.491	20	B	0.499	21	C	1	No
		A	PM	0.572	39	D	0.573	39	D	0	No
		A	WKND	0.484	30	C	0.494	30	C	0	No
11	SECOND STREET & WILSHIRE BOULEVARD	A	AM	0.364	36	D	0.365	36	D	0	No
		A	PM	0.392	71	E	0.392	66	E	-5	No
		A	WKND	0.762	**	F	0.768	**	F	0.006	Yes
12	SECOND STREET & ARIZONA AVENUE	C	AM	0.327	29	C	0.359	29	C	0	No
		C	PM	0.397	29	C	0.435	30	C	1	No
		C	WKND	0.364	29	C	0.401	29	C	0	No
13	SECOND STREET & SANTA MONICA BOULEVARD	A	AM	0.336	29	C	0.355	31	C	2	No
		A	PM	1.135	97	F	1.038	89	F	-8	No
		A	WKND	1.088	86	F	0.953	83	F	-3	No
14	SECOND STREET & BROADWAY	C	AM	0.283	27	C	0.282	27	C	0	No
		C	PM	0.281	27	C	0.288	28	C	1	No
		C	WKND	0.350	29	C	0.350	29	C	0	No
15	SECOND STREET & COLORADO AVENUE	A	AM	0.294	35	C	0.300	36	D	1	No
		A	PM	0.320	35	C	0.340	36	D	1	No
		A	WKND	0.374	35	C	0.388	35	C	0	No
16	MAIN STREET & OLYMPIC DRIVE	C	AM	0.690	94	F	0.696	94	F	0.006	Yes
		C	PM	0.378	22	C	0.384	22	C	0	No
		C	WKND	0.614	81	F	0.619	80	E	0.005	Yes
17	MAIN STREET & PICO BOULEVARD	A	AM	0.544	25	C	0.553	25	C	0	No
		A	PM	0.441	25	C	0.443	25	C	0	No
		A	WKND	0.524	30	C	0.536	30	C	0	No
18	FOURTH STREET & WILSHIRE BOULEVARD	A	AM	0.287	28	C	0.288	28	C	0	No
		A	PM	0.293	28	C	0.294	28	C	0	No
		A	WKND	0.324	29	C	0.325	29	C	0	No
19	FOURTH STREET & ARIZONA AVENUE	A	AM	0.311	26	C	0.321	27	C	1	No
		A	PM	0.372	30	C	0.378	31	C	1	No
		A	WKND	0.381	30	C	0.390	31	C	1	No
20	FOURTH STREET & SANTA MONICA BOULEVARD	A	AM	0.294	23	C	0.310	24	C	1	No
		A	PM	0.274	28	C	0.292	29	C	1	No
		A	WKND	0.304	29	C	0.324	29	C	0	No

21	FOURTH STREET & BROADWAY	A	AM	0.394	35	C	0.398	35	C	0	No
		A	PM	0.495	41	D	0.487	41	D	0	No
		A	WKND	0.476	41	D	0.475	41	D	0	No
22	FOURTH STREET & COLORADO AVENUE	A	AM	0.303	17	B	0.304	17	B	0	No
		A	PM	0.429	23	C	0.432	24	C	1	No
		A	WKND	0.423	24	C	0.428	24	C	0	No
23	FOURTH STREET & I-10 WB OFF-RAMP	A	AM	0.704	39	D	0.720	42	D	3	No
		A	PM	0.574	29	C	0.583	29	C	0	No
		A	WKND	0.467	26	C	0.481	26	C	0	No
24	FOURTH STREET & I-10 EB ON-RAMP	A	AM	0.574	41	D	0.577	41	D	0	No
		A	PM	0.557	25	C	0.558	25	C	0	No
		A	WKND	0.538	43	D	0.542	44	D	1	No
25	FIFTH STREET & WILSHIRE BOULEVARD	A	AM	0.289	17	B	0.291	17	B	0	No
		A	PM	0.391	18	B	0.393	18	B	0	No
		A	WKND	0.393	16	B	0.398	16	B	0	No
26	FIFTH STREET & ARIZONA AVENUE	C	AM	0.288	20	B	0.298	20	B	0	No
		C	PM	0.316	21	C	0.318	21	C	0	No
		C	WKND	0.500	25	C	0.496	25	C	0	No
27	FIFTH STREET & SANTA MONICA BOULEVARD	A	AM	0.287	24	C	0.292	23	C	-1	No
		A	PM	0.373	22	C	0.380	22	C	0	No
		A	WKND	0.369	27	C	0.374	27	C	0	No
28	FIFTH STREET & BROADWAY	C	AM	0.377	24	C	0.378	24	C	0	No
		C	PM	0.388	23	C	0.388	23	C	0	No
		C	WKND	0.449	22	C	0.448	22	C	0	No
29	FIFTH STREET & COLORADO AVENUE	A	AM	0.324	22	C	0.324	22	C	0	No
		A	PM	0.426	23	C	0.427	23	C	0	No
		A	WKND	0.417	24	C	0.418	24	C	0	No
30	SIXTH STREET & ARIZONA AVENUE	C	AM	0.257	17	B	0.257	18	B	1	No
		C	PM	0.386	20	B	0.389	20	B	0	No
		C	WKND	0.394	16	B	0.404	16	B	0	No
31	SIXTH STREET & SANTA MONICA BOULEVARD	A	AM	0.320	15	B	0.333	15	B	0	No
		A	PM	0.401	18	B	0.415	18	B	0	No
		A	WKND	0.487	17	B	0.509	17	B	0	No
32	SEVENTH STREET & ARIZONA AVENUE	C	AM	0.336	21	C	0.336	21	C	0	No
		C	PM	0.364	20	B	0.362	20	B	0	No
		C	WKND	0.416	21	C	0.418	21	C	0	No
33	SEVENTH STREET & SANTA MONICA BOULEVARD	A	AM	0.353	19	B	0.360	19	B	0	No
		A	PM	0.383	19	B	0.392	19	B	0	No
		A	WKND	0.425	21	C	0.432	21	C	0	No
34	LINCOLN BOULEVARD & WILSHIRE BOULEVARD	A	AM	0.451	22	C	0.455	22	C	0	No
		A	PM	0.447	22	C	0.450	22	C	0	No
		A	WKND	0.504	22	C	0.506	22	C	0	No
35	LINCOLN BOULEVARD & ARIZONA AVENUE	A	AM	0.812	50	D	0.815	50	D	0	No
		A	PM	0.800	38	D	0.800	38	D	0	No
		A	WKND	0.648	30	C	0.648	30	C	0	No
36	LINCOLN BOULEVARD & SANTA MONICA BOULEVARD	A	AM	0.487	24	C	0.495	25	C	1	No
		A	PM	0.568	27	C	0.577	28	C	1	No
		A	WKND	0.600	31	C	0.610	33	C	2	No
37	LINCOLN BOULEVARD & BROADWAY	A	AM	0.545	30	C	0.545	30	C	0	No
		A	PM	0.584	31	C	0.586	31	C	0	No
		A	WKND	0.673	38	D	0.673	38	D	0	No
38	LINCOLN BOULEVARD & COLORADO AVENUE	A	AM	0.525	71	E	0.525	71	E	0	No
		A	PM	0.521	53	D	0.522	52	D	-1	No
		A	WKND	0.623	52	D	0.628	54	D	2	No
39	LINCOLN BOULEVARD & I-10 WB OFF-RAMP	A	AM	0.959	91	F	0.961	91	F	0.002	No
		A	PM	0.698	40	D	0.699	40	D	0	No
		A	WKND	0.833	53	D	0.834	53	D	0	No
40	LINCOLN BOULEVARD & I-10 EB ON-RAMP	A	AM	0.807	38	D	0.808	38	D	0	No
		A	PM	0.550	30	C	0.552	30	C	0	No
		A	WKND	0.761	36	D	0.762	36	D	0	No

Notes:

* Average stopped delay per vehicle, in seconds.

** Indicates oversaturated conditions. Delay cannot be calculated.

A Arterial intersection

C Collector intersection

FUTURE YEAR (2025) NO PROJECT INTERSECTION CONDITIONS

The Future Year (2025) No Project traffic conditions described in Chapter 3 and shown in Appendix B were analyzed using the LOS methodologies described in Chapter 2 to project future LOS at the study intersections during the analyzed peak hours. The results of this analysis are summarized in Table 6. Detailed Vistro LOS calculation worksheets are provided in Appendix B.

As shown in Table 6, of the 40 study intersections, the following 13 study intersections are projected to operate at LOS E or LOS F during at least one of the analyzed peak hours:

1. Palisades Beach Road & California Incline (LOS E in the AM peak hour)
2. Ocean Avenue & California Avenue (LOS E in the AM, LOS F in the PM and weekend midday peak hours)
3. Ocean Avenue & Wilshire Boulevard (LOS E in the weekend midday peak hour)
6. Ocean Avenue & Broadway (LOS E in the PM and weekend midday peak hours)
11. 2nd Street & Wilshire Boulevard (LOS E in the AM, LOS F in the PM and weekend midday peak hours)
13. 2nd Street & Santa Monica Boulevard (LOS F in the PM and weekend midday peak hours)
16. Main Street & Olympic Drive (LOS F in the AM and weekend midday peak hours)
19. 4th & Santa Monica Boulevard (LOS E in the PM, LOS F in the weekend midday peak hour)
24. 4th Street & I-10 Eastbound On-Ramp (LOS E in the AM peak hour)
35. Lincoln Boulevard & Arizona Avenue (LOS E in the PM peak hour)
38. Lincoln Boulevard & Colorado Avenue (LOS E in the AM peak hour)
39. Lincoln Boulevard & I-10 Westbound Off-Ramp (LOS F in the AM, LOS E in the weekend midday peak hour)
40. Lincoln Boulevard & I-10 Eastbound On-Ramp (LOS E in the weekend midday peak hour)



**TABLE 6
FUTURE YEAR (2025) INTERSECTION LEVEL OF SERVICE AND IMPACT ANALYSIS
CITY OF SANTA MONICA - HCM 2010 METHODOLOGY**

NO.	INTERSECTION	CLASS	PEAK HOUR	FUTURE NO PROJECT			FUTURE + PROJECT			V/C OR DELAY CHANGE	SIGNIFICANT IMPACT?
				V/C	DELAY*	LOS	V/C	DELAY*	LOS		
1	PALISADES BEACH ROAD & CALIFORNIA INCLINE	A	AM	1.109	65	E	1.118	67	E	2	Yes
		A	PM	0.949	49	D	0.949	50	D	1	No
		A	WKND	1.243	53	D	1.245	54	D	1	No
2	OCEAN AVENUE & CALIFORNIA AVENUE	A	AM	0.747	57	E	0.751	60	E	3	Yes
		A	PM	1.141	**	F	1.152	**	F	0.011	Yes
		A	WKND	1.949	**	F	1.960	**	F	0.011	Yes
3	OCEAN AVENUE & WILSHIRE BOULEVARD	A	AM	0.334	13	B	0.337	13	B	0	No
		A	PM	0.458	47	D	0.462	46	D	-1	No
		A	WKND	0.449	65	E	0.453	64	E	-1	No
4	OCEAN AVENUE & ARIZONA AVENUE	A	AM	0.302	8	A	0.307	8	A	0	No
		A	PM	0.348	12	B	0.348	12	B	0	No
		A	WKND	0.362	13	B	0.367	13	B	0	No
5	OCEAN AVENUE & SANTA MONICA BOULEVARD	A	AM	0.325	10	A	0.339	11	B	1	No
		A	PM	0.460	25	C	0.476	27	C	2	No
		A	WKND	0.512	37	D	0.525	38	D	1	No
6	OCEAN AVENUE & BROADWAY	A	AM	0.407	13	B	0.415	13	B	0	No
		A	PM	0.630	61	E	0.639	61	E	0	No
		A	WKND	0.657	61	E	0.666	61	E	0	No
7	OCEAN AVENUE & COLORADO AVENUE	A	AM	0.384	26	C	0.396	26	C	0	No
		A	PM	0.464	37	D	0.472	38	D	1	No
		A	WKND	0.591	46	D	0.596	46	D	0	No
8	OCEAN AVENUE & MOOMAT AHIKO WAY	A	AM	0.462	26	C	0.467	26	C	0	No
		A	PM	0.497	25	C	0.498	25	C	0	No
		A	WKND	0.558	32	C	0.563	32	C	0	No
9	OCEAN AVENUE & OLYMPIC DRIVE	A	AM	0.464	13	B	0.469	13	B	0	No
		A	PM	0.584	16	B	0.585	16	B	0	No
		A	WKND	0.574	42	D	0.580	42	D	0	No
10	OCEAN AVENUE & PICO BOULEVARD	A	AM	0.571	21	C	0.580	21	C	0	No
		A	PM	0.546	37	D	0.556	38	D	1	No
		A	WKND	0.563	30	C	0.570	30	C	0	No
11	SECOND STREET & WILSHIRE BOULEVARD	A	AM	0.607	76	E	0.609	75	E	-1	No
		A	PM	1.127	**	F	0.927	**	F	-0.2	No
		A	WKND	2.792	**	F	2.792	**	F	0	No
12	SECOND STREET & ARIZONA AVENUE	C	AM	0.279	27	C	0.306	27	C	0	No
		C	PM	0.423	29	C	0.454	30	C	1	No
		C	WKND	0.586	33	C	0.622	36	D	3	Yes
13	SECOND STREET & SANTA MONICA BOULEVARD	A	AM	0.641	36	D	0.482	31	C	-5	No
		A	PM	1.279	**	F	1.339	**	F	0.06	Yes
		A	WKND	1.276	**	F	1.265	**	F	-0.011	No
14	SECOND STREET & BROADWAY	C	AM	0.345	29	C	0.349	30	C	1	No
		C	PM	0.403	29	C	0.411	30	C	1	No
		C	WKND	0.439	33	C	0.439	33	C	0	No
15	SECOND STREET & COLORADO AVENUE	A	AM	0.371	39	D	0.378	39	D	0	No
		A	PM	0.435	37	D	0.454	38	D	1	No
		A	WKND	0.456	43	D	0.461	43	D	0	No
16	MAIN STREET & OLYMPIC DRIVE	C	AM	0.771	**	F	0.777	**	F	0.006	Yes
		C	PM	0.416	19	B	0.420	18	B	-1	No
		C	WKND	0.661	100	F	0.667	99	F	0.006	Yes
17	MAIN STREET & PICO BOULEVARD	A	AM	0.496	25	C	0.504	25	C	0	No
		A	PM	0.415	23	C	0.423	24	C	1	No
		A	WKND	0.591	45	D	0.602	46	D	1	No
18	FOURTH STREET & WILSHIRE BOULEVARD	A	AM	0.526	42	D	0.529	42	D	0	No
		A	PM	0.493	37	D	0.491	37	D	0	No
		A	WKND	0.566	47	D	0.568	48	D	1	No
19	FOURTH STREET & ARIZONA AVENUE	A	AM	0.472	28	C	0.481	29	C	1	No
		A	PM	0.631	65	E	0.634	68	E	3	Yes
		A	WKND	0.708	97	F	0.722	**	F	0.014	Yes
20	FOURTH STREET & SANTA MONICA BOULEVARD	A	AM	0.481	24	C	0.497	25	C	1	No
		A	PM	0.370	26	C	0.375	27	C	1	No
		A	WKND	0.495	32	C	0.515	35	C	3	No

21	FOURTH STREET & BROADWAY	A	AM	0.539	39	D	0.541	39	D	0	No
		A	PM	0.587	46	D	0.588	46	D	0	No
		A	WKND	0.582	44	D	0.587	44	D	0	No
22	FOURTH STREET & COLORADO AVENUE	A	AM	0.407	19	B	0.408	19	B	0	No
		A	PM	0.437	23	C	0.441	23	C	0	No
		A	WKND	0.438	26	C	0.444	26	C	0	No
23	FOURTH STREET & I-10 WB OFF-RAMP	A	AM	0.718	36	D	0.733	39	D	3	No
		A	PM	0.582	28	C	0.580	28	C	0	No
		A	WKND	0.585	27	C	0.599	27	C	0	No
24	FOURTH STREET & I-10 EB ON-RAMP	A	AM	0.604	57	E	0.607	57	E	0	No
		A	PM	0.553	26	C	0.554	26	C	0	No
		A	WKND	0.557	55	D	0.562	55	D	0	No
25	FIFTH STREET & WILSHIRE BOULEVARD	A	AM	0.285	16	B	0.287	16	B	0	No
		A	PM	0.382	17	B	0.384	17	B	0	No
		A	WKND	0.461	17	B	0.462	17	B	0	No
26	FIFTH STREET & ARIZONA AVENUE	C	AM	0.231	19	B	0.231	19	B	0	No
		C	PM	0.430	22	C	0.440	22	C	0	No
		C	WKND	0.512	27	C	0.516	27	C	0	No
27	FIFTH STREET & SANTA MONICA BOULEVARD	A	AM	0.268	22	C	0.274	22	C	0	No
		A	PM	0.391	21	C	0.399	21	C	0	No
		A	WKND	0.403	24	C	0.408	24	C	0	No
28	FIFTH STREET & BROADWAY	C	AM	0.350	23	C	0.349	23	C	0	No
		C	PM	0.405	21	C	0.404	21	C	0	No
		C	WKND	0.496	23	C	0.495	23	C	0	No
29	FIFTH STREET & COLORADO AVENUE	A	AM	0.371	23	C	0.372	23	C	0	No
		A	PM	0.427	24	C	0.428	24	C	0	No
		A	WKND	0.545	27	C	0.546	28	C	1	No
30	SIXTH STREET & ARIZONA AVENUE	C	AM	0.250	19	B	0.259	19	B	0	No
		C	PM	0.458	20	B	0.469	20	B	0	No
		C	WKND	0.410	14	B	0.424	14	B	0	No
31	SIXTH STREET & SANTA MONICA BOULEVARD	A	AM	0.311	15	B	0.325	15	B	0	No
		A	PM	0.499	22	C	0.513	22	C	0	No
		A	WKND	0.495	18	B	0.516	19	B	1	No
32	SEVENTH STREET & ARIZONA AVENUE	C	AM	0.289	18	B	0.289	18	B	0	No
		C	PM	0.410	20	B	0.416	20	B	0	No
		C	WKND	0.409	18	B	0.415	18	B	0	No
33	SEVENTH STREET & SANTA MONICA BOULEVARD	A	AM	0.341	18	B	0.348	17	B	-1	No
		A	PM	0.416	19	B	0.425	19	B	0	No
		A	WKND	0.421	21	C	0.428	20	B	-1	No
34	LINCOLN BOULEVARD & WILSHIRE BOULEVARD	A	AM	0.454	22	C	0.458	22	C	0	No
		A	PM	0.438	21	C	0.440	21	C	0	No
		A	WKND	0.520	23	C	0.523	23	C	0	No
35	LINCOLN BOULEVARD & ARIZONA AVENUE	A	AM	0.757	35	C	0.757	35	C	0	No
		A	PM	0.898	59	E	0.896	59	E	0	No
		A	WKND	0.564	31	C	0.568	31	C	0	No
36	LINCOLN BOULEVARD & SANTA MONICA BOULEVARD	A	AM	0.477	24	C	0.486	24	C	0	No
		A	PM	0.609	35	C	0.619	37	D	2	No
		A	WKND	0.659	41	D	0.669	45	D	4	No
37	LINCOLN BOULEVARD & BROADWAY	A	AM	0.584	38	D	0.585	38	D	0	No
		A	PM	0.585	34	C	0.587	34	C	0	No
		A	WKND	0.643	38	D	0.643	38	D	0	No
38	LINCOLN BOULEVARD & COLORADO AVENUE	A	AM	0.580	67	E	0.580	67	E	0	No
		A	PM	0.544	51	D	0.545	50	D	-1	No
		A	WKND	0.761	50	D	0.766	51	D	1	No
39	LINCOLN BOULEVARD & I-10 WB OFF-RAMP	A	AM	0.981	100	F	0.982	100	F	0.001	No
		A	PM	0.763	44	D	0.764	44	D	0	No
		A	WKND	0.865	64	E	0.866	64	E	0	No
40	LINCOLN BOULEVARD & I-10 EB ON-RAMP	A	AM	0.755	29	C	0.756	29	C	0	No
		A	PM	0.568	30	C	0.570	30	C	0	No
		A	WKND	0.900	59	E	0.901	59	E	0	No

Notes:

* Average stopped delay per vehicle, in seconds.

** Indicates oversaturated conditions. Delay cannot be calculated.

A Arterial intersection

C Collector intersection

FUTURE YEAR (2025) PLUS PROJECT TRAFFIC IMPACT ASSESSMENT

The Future Year (2025) Plus Project traffic conditions were analyzed to determine future operating conditions at the study intersections and to identify impacts resulting from the addition of Project-generated trips. At some intersections, the average vehicle delay in the future decreases slightly even as Project-generated trips are added. Under the "Operational Analysis" method from the HCM, intersection delay is a calculation whereby the overall delay is not additive, but rather a weighted average of all movements. Adding trips to some movements which are already congested will increase overall delay but adding trips to movements with available capacity could decrease the average delay value slightly.

Table 6 summarizes the results of the Future Year (2025) Plus Project traffic conditions. Of the 40 study intersections, 6 study intersections were found to be significantly impacted by the proposed Project:

1. Palisades Beach Road & California Incline (LOS E in the AM peak hour)
2. Ocean Avenue & California Avenue (LOS E in the AM, LOS F in the PM and weekend midday peak hours)
12. 2nd Street & Arizona Avenue (LOS D in the weekend midday peak hour)
13. 2nd Street & Santa Monica Boulevard (LOS F in the PM and weekend midday peak hours)
16. Main Street & Olympic Drive (LOS F in the AM and weekend midday peak hours)
19. 4th & Santa Monica Boulevard (LOS E in the PM, LOS F in the weekend midday peak hour)

Intersection #11, 2nd Street & Wilshire Boulevard, is impacted under Approval Year (2020) Plus Project, but not under the Future Year (2025) Plus Project traffic conditions, primarily due to a nearby cumulative development project which substantially increases the average delay at this intersection. As a result, under future conditions, the addition of this proposed Project traffic is relatively minor and does not trigger an impact, even though the intersection is projected to operate at LOS F under Future Year (2025) No Project conditions.



VEHICLE MILES TRAVELED (VMT) ANALYSIS

Background

Authorized in September of 2013, Senate Bill (SB) 743 directed the Office of Planning and Research (OPR) to revise the CEQA Guidelines (California Code of Regulations, Title 14) to establish new criteria for determining the significance of transportation impacts and define alternative metrics for traffic LOS. Once the CEQA Guidelines are amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA.

OPR adopted final guidelines in December 2018, and the provisions of SB743 are now in effect, with agencies having an opt-in period until July 1, 2020. At the time of this publication, the City has not adopted VMT-based impact criteria. Project VMT analysis is included in this report for informational purposes.

Screening Thresholds and VMT Significance Thresholds

OPR's CEQA Guidelines includes new Section 15064.3, subdivision (b)(1), which states that *"generally, projects within 0.5 mile of an existing major transit stop or an existing stop along a high quality transit corridor should be presumed to have a less than significant impact on VMT."* Per the Technical Advisory, this presumption would not apply, however, if project-specific or location-specific information indicates that a project would still generate significant levels of VMT. For example, the presumption might not be appropriate if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking)
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization)

Additionally, the Technical Advisory states that agencies may screen out VMT impacts using project size and maps:

- Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant transportation impact.
- Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with data from a travel survey or travel demand model can illustrate areas that are currently below threshold VMT. Because new development in such locations would likely result in a similar



level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.

The CEQA Guidelines apply prospectively, meaning that projects such as this one are not required to incorporate VMT as the primary transportation impact metric. This information is quantified here for informational purposes. No determination of significance is provided since the City has not yet adopted significance thresholds for VMT or a methodology for determining impacts based on VMT.

The City is in the process of drafting new VMT guidance for CEQA transportation review of projects and will be adopting new VMT based significance thresholds prior to July 1, 2020 in conformance with the new CEQA guidelines. Should the City adopt new significance thresholds based on VMT, the thresholds would apply prospectively to future projects (i.e., pending projects such as this would not be subject to the new thresholds).

VMT Analysis of Project

The VMT estimates for the proposed Project are based on the OPR guidance, which recommend evaluating each component of a mixed-use project independently. Guidance is provided for several broad land use types (i.e., residential, office, retail) that account for majority of the development projects that are proposed. The proposed Project includes hotel, a Cultural Use Campus (anticipated to be similar to a museum), retail, restaurant (which is fundamentally the same as retail from a travel perspective), and residential.

The estimates of VMT are based on the total trip generation estimates presented in Table 4. The proposed Project is estimated to generate a total of 3,479 daily trips among all the proposed uses. For office-type uses, the suggested metric is VMT per employee. While there is no office-type land use for this project, employee VMT estimates were calculated using the applicant's own projection of employees – inclusive of the hotel, condominiums, and restaurant space. For residential uses, the suggested metric is VMT per capita. Finally, VMT for all other visitors to the site (including hotel guests, restaurant and retail visitors, and Cultural Use Campus visitors) are analyzed together and provided for informational purposes.

The following steps were used to estimate Project-generated VMT, which are compared with Citywide averages for context. For each use, the total trips are multiplied by the average trip length for that type of trip from the City's TDFM TAZs at and around the Project site; that number of total miles is divided by the number of people related to that use (i.e., employees, residents, other visitors). The following sections detail the assumptions and VMT calculations for each trip type in this project: employees, residents, and all other visitors.



Employee VMT

- For office/employment VMT, determine the number of employees for the project: The applicant, City staff, and the EIR team provided estimates that total employment would be 212 workers, including 85 retail/restaurant workers, 103 hotel workers, and 24 Cultural Use Campus workers.
 - Apply the average vehicle ridership (AVR) factor of 2.2, which is the AVR target established for this site per Santa Monica Municipal Code Section 9.53.040, resulting in an estimate 193 daily employee trips (212 employees each making a round trip with an AVR of 2.2).
 - City's TDFM, discussed in Chapter 3, includes data on, the average daily trips, VMT, and trip length and by trip purpose for each TAZ, as well as the Citywide averages. While the proposed Project is located in the TAZ 138, it does not include hotel as a land use. Nearby TAZ 78 was referenced instead as it includes hotel and retail land uses. The average home-based work trip attraction in TAZ 78 is 12.6 miles, which is slightly higher than the Citywide average of 12.1 miles.
- Multiply the estimated employee trips by the trip length and divide by the number of employees to calculate average VMT per employee. Thus 193 employee trips of 12.6 miles each equals 2,432 total miles. This equates to 11.5 VMT per employee. This is slightly more than half of the Citywide average of 19.2 VMT per employee.

Residential VMT

- Estimate the total number of people for all residential units for the project. The proposed Project is estimated to include a total of 100 residential units.
 - The average household size for this census tract (Census Tract 7019.02) is 1.53. Applying this factor to the total number of residential units results in 153 people. In this case, the proposed Project residential unit mix includes 2- or 3-bedroom units, which is different from the existing mix of predominantly 1-bedroom housing in the Census tract. Therefore, the Citywide 2017 American Community Survey 5-Year Estimates⁶ for the City provides the estimate of project household size for the residential units. The residential units are estimated to have an average household size of 1.39 for studio and 1-bedroom units, 2.41 for 2-bedroom units, and 3.09 for 3-bedroom units. Applying these factors results in an estimated project population of 180 people.
 - As discussed in Chapter 3, the proposed Project would generate 352 daily residential trips.

⁶ <https://www.census.gov/programs-surveys/acs/data.html>



- City's TDFM, discussed in Chapter 3, includes data on, the average daily trips, VMT, and trip length and by trip purpose for each TAZ, as well as the Citywide averages. The residential use for the proposed Project is located in the TAZ 138. The average home-based productions trip length in TAZ 138 is 5.5 miles, which is slightly higher than the Citywide average of 5.4 miles.
- Multiply the estimated residential trips by the trip length and divide by the total number of people per household to calculate average VMT per capita. Thus 352 residential trips of 5.5 miles each equals 1,936 total miles. This equates to 10.8 VMT per capita. This is slightly higher than the Citywide average of 9.0 VMT per capita.
 - While residential infill in dense urban areas with good walking, biking, and transit access (non-automotive modes) such as the Downtown are known to ultimately decrease VMT, as analyzed this project would result in a VMT per capita higher than the Citywide average. The VMT per capita is affected by the assumptions described above, particularly the assumptions of Project-generated trips and the ultimate residential population of the Project (i.e., the "per capita"). The assumptions for the population associated with the proposed Project were developed as described above.
 - While the trip lengths for this area are short, reflecting the high degree of non-automotive access, the Project-generated trip assumption is based on a conservative approach for the purpose of analyzing intersection LOS, which seeks to evaluate a worst-case scenario for traffic operations per the City's current impact assessment methodology. The worst-case scenario assumptions for the proposed Project assume a trip generation rate (as shown in Table 4) of 2 cars per household for all units of 2 or more bedrooms.
 - Acknowledging the high degree of non-automotive access within the Downtown, the applicant proposes to build the maximum allowable number of residential spaces as defined by the DCP, which is fewer than 1 space per unit. The applicant is not including residential parking permits with units (known as "unbundled parking") allowing for flexibility to provide exactly the number of residential spaces as there is demand for at any given time. This could significantly lower the actual Project-generated trips (estimated to be approximately 282 daily trips compared with the conservatively estimated 353 shown in Table 4). Using the lower trip generation rate assumptions for the affordable units would reduce the VMT per capita to approximately 8.63, less than the Citywide average.



Non-Employee and Non-Residential VMT (All Other Visitors)

- Estimate the number of non-employee and non-residential trips to and from the project. If 545 daily trips are made by employees and residents, then the remaining 2,934 daily trips are made by hotel guests, Cultural Use Campus visitors, and other non-employees/residents.
- The average trip length for “home-based other” trip attractions and “non-home-based” trip attraction in TAZ 138 is 9.1 miles. The average trip length for “non-home-based” trip productions in TAZ 138 is 5.6 miles. These trip types represent all other travel activity that is not directly related to commute trips or home-based trips, which would include hotel guests and Cultural Use Campus visitors. Applying these trip lengths to the estimated non-employee and non-residential inbound and outbound trips yields an estimate of 21,565 miles per day. This likely represents a conservative analysis to estimating VMT for commercial uses since it does not account for the potential that new commercial (i.e., retail and restaurant) development can result in a redistribution of trips rather than the creation of new trips. Thus, it does not account for the potential that some trips would replace trips that would otherwise be made to and from other commercial destinations in the area.

When added to the 2,432 estimated miles of employee trips per day and 1,936 estimated miles of residential trips per day, total daily VMT for the proposed Project is estimated to be 25,933 miles.



5. ANALYSIS OF POTENTIAL INTERSECTION MITIGATION MEASURES

An investigation was conducted for potential mitigation measures to reduce or eliminate the significant intersection impacts identified. The emphasis was to identify physical improvements that could be implemented within the existing roadway right-of-way (ROW). At most locations in Santa Monica, the streets are already built to their maximum potential width. Reconfiguring the streets to provide additional capacity for vehicles could have adverse secondary impacts such as loss of parking, conflicts with bicycle or pedestrian modes, or potential requirements for demolition of improvements such as buildings and would conflict with the LUCE objectives, DCP objectives, and other City policies promoting alternative modes of transportation.

The mitigation measures studied are limited to intersection impacts, because at the time of this study, the City has not adopted thresholds for VMT impacts against which a mitigation could be evaluated. Additionally, as described in Chapter 4, the proposed Project falls within 0.5 mile of an existing major transit stop (i.e., Downtown Santa Monica Station), and OPR guidance is to presume such projects have a less than significant impact on VMT. Finally, the applicant and the City will negotiate a TDM program as part of the Development Agreement, as described in Chapter 3.

As discussed below, physical improvements were considered to reduce the severity of the Approval Year (2020) Plus Project and Future Year (2025) Plus Project traffic impacts. In some cases, retiming of traffic signals and implementation of split phasing or protected left turns could reduce or eliminate impacts; however, the City does not consider signal timing adjustments as appropriate mitigation measures because they may limit the ability to make future adjustments as needed to address the needs of changing travel demands, pedestrians, and bicyclists. For example, the City recently implemented leading pedestrian intervals, as described in Chapter 2, which can increase average vehicle delay somewhat by shifting more time to pedestrian crossings, while improving the safety for people crossing the street.

APPROVAL YEAR AND FUTURE YEAR PLUS PROJECT MITIGATION MEASURES

Tables 5 and 6 summarize the Approval Year (2020) Plus Project and Future Year (2025) Plus Project intersection impacts according to the City's adopted impact significance criteria and further indicate whether the impact can be physically or operationally mitigated. Three impacted intersections in Approval Year (2020) Plus Project are also impacted in Future Year (2025) Plus Project. One intersection, 2nd Street & Wilshire Boulevard, is impacted only under Approval Year (2020) Plus Project traffic conditions, which is discussed further below. All other impacted intersections are only under the Future Year (2025) Plus Project traffic conditions. This section describes the potential mitigation measures that were reviewed for the significantly impacted intersections listed below.



1. Palisades Beach Road (PCH) & California Avenue
2. Ocean Avenue & California Avenue
11. 2nd Street & Wilshire Boulevard
12. 2nd Street & Arizona Avenue
13. 2nd Street & Wilshire Boulevard
16. Main Street & Olympic Drive
19. Lincoln Boulevard & California Avenue

1. Palisades Beach Road (PCH) & California Incline

This intersection experiences a small increase in delay under the Approval Year (2020) Plus Project and Future Year (2025) Plus Project traffic conditions during the weekday AM peak hour, and additionally during the weekend midday peak hour under Future Year (2025) Plus Project traffic conditions. This signal is on a state highway and controlled by the California Department of Transportation (Caltrans). A small percentage of Project-generated trips are forecast to use the California Incline to access the PCH northbound towards Malibu and Ventura, and southbound as the shortest path to reach I-10 eastbound from the Project site. The current signal configuration permits eastbound and westbound movements during the same phase. A feasible mitigation is to reconfigure the signal to operate a split phase eastbound and westbound so that the minimal volumes exiting the Jonathan Club driveway (eastbound approach) are not conflicting with the significantly higher volume turning left from the westbound California Incline. Sometime prior to the 2016 reconstruction of the California Incline, this intersection was operated with split phasing. The split phase and retiming of this signal would reduce the delay to below the Plus Project traffic conditions at LOS E. However, signal phasing and timing changes are not considered an appropriate mitigation measure as it conflicts with the ability of the City in cooperation with Caltrans to make future adjustments to signal timing as needed to improve pedestrian and bicycle safety and access, which are key mobility goals set by City policy. Therefore, the impact remains significant and unavoidable.

2. Ocean Avenue & California Avenue

This intersection is impacted during the PM and weekend midday peak hours under Approval Year (2020) Plus Project and Future Year (2025) Plus Project traffic conditions and during the AM peak hour under Future Year (2025) Plus Project traffic conditions. In 2018, the City adjusted signal timing at this intersection to implement leading pedestrian intervals (described in Chapter 3), which increases all-red time for vehicles in order to improve pedestrian and bicyclist safety. This intersection is also the connection point between heavily used north-south bicycle lanes on Ocean Avenue, east-west bicycle lanes on California Avenue, and a two-way cycletrack on the California Incline that provides pedestrian and bicycle access to the beach over the PCH.

The addition of Project-generated trips at this location increases overall intersection delay. The critical movement is the eastbound through from the California Incline, which shares a lane with left-turning traffic. The westbound approach experiences a similarly saturated condition, with a high volume of left and through movements sharing a lane. The best potential mitigation is to reconfigure and retime the traffic signal to



operate a split phase eastbound and westbound. A split phase would remove conflicts between through and left movements, improving overall delay to LOS E or better in all Plus Project traffic conditions. However, signal phasing and timing changes are not considered an appropriate mitigation measure as described earlier in this section. Therefore, the impact remains significant and unavoidable.

11. 2nd Street & Wilshire Boulevard

This intersection is impacted during the weekend midday peak hour under Approval Year (2020) Plus Project traffic conditions. The southbound approach is impacted by the addition of Project-generated trips, due to a single-lane approach to accommodate all movements. This intersection is anticipated to operate at less than satisfactory conditions (LOS D or worse) under the Approval Year (2020) Plus Project traffic conditions primarily due to the single shared lane on the southbound approach. A possible mitigation is to remove four to eight on-street metered parking spaces on the western side of 2nd Street in order to stripe a two-lane southbound approach with one left-turn lane and one shared through/right-turn lane. Doing so would require the reconfiguration of the southbound bicycle lane on 2nd Street to possibly include a shared lane conflict marking (hatched green bicycle lane) similar to the existing configuration of the northbound approach. With approximately 25- to 30-foot of width from the existing centerline to the curb, it appears that there would be sufficient space following the removal of parking to accommodate a left-turn pocket, a through lane, and the bicycle lane. The addition of a left-turn pocket would improve the intersection V/C to better than the No Project traffic conditions during all peak hours in the Approval Year (2020) Plus Project traffic conditions. Therefore, the impact at this location would be less than significant after mitigation.

This intersection is not impacted under the Future Year (2025) Plus Project traffic conditions, primarily due to a nearby cumulative development project which substantially increases the average delay at this intersection. As a result, under future conditions, the addition of this proposed Project traffic is relatively minor and does not trigger an impact, even though the intersection is projected to operate at LOS F.

The LOS at 2nd Street & Wilshire Boulevard after mitigation are as follows:

- Approval Year (2020) Plus Project with Mitigation (LOS / Delay / V/C):
 - AM: LOS C / 24.73 / 0.260 (this peak hour was not impacted by the proposed Project)
 - PM: LOS D / 44.32 / 0.306 (this peak hour was not impacted by the proposed Project)
 - Weekend Midday: LOS F / 60.95 / 0.375 (this peak hour was impacted at LOS F by the proposed Project increasing V/C by greater than 0.005; the mitigation reduces the V/C to below the Approval Year (2020) No Project traffic conditions)

- Future Year (2025) Plus Project with Mitigation:
 - AM: LOS C / 28.07 / 0.391 (this peak hour was not impacted by the proposed Project; however, the mitigation reduces the delay and V/C to below the Future Year (2025) No Project traffic conditions)



- PM: LOS C / 28.54 / 0.301 (this peak hour was not impacted by the proposed Project; however, the mitigation reduces the delay and V/C to below the Future Year (2025) No Project traffic conditions)
- Weekend Midday: LOS F / > 100 / 1.712 (this peak hour was not impacted by the proposed Project; however, the mitigation reduces the delay and V/C to below the Future Year (2025) No Project traffic conditions)

12. 2nd Street & Arizona Avenue

This intersection is impacted during the weekend midday peak hour under Future Year (2025) Plus Project traffic conditions. The addition of Project-generated trips at this location increases overall intersection delay. The critical movement is the southbound approach. A possible mitigation is to remove on-street metered parking and the bicycle lane on the eastern side of 2nd Street in order to stripe a right-turn only lane, with a left-turn pocket and through lane. The addition of a right-turn only lane would improve the intersection's delay to better than the No Project traffic conditions during all peak hours under Future Year (2025) Plus Project traffic conditions. However, removing the bicycle lane conflicts with the City policy to encourage walking and bicycling in the City. In addition, such mitigation may displace or reduce use of alternative transportation modes that help reduce VMT and those could conflict with the purpose and intent of SB 743. Therefore, the impact remains significant and unavoidable.

13. 2nd Street & Santa Monica Boulevard

This intersection is impacted during the PM peak hour under Future Year (2025) Plus Project traffic conditions. The addition of Project-generated trips at this location increases overall intersection delay. The critical movement is the westbound through, which shares a lane with left-turning traffic. Within the existing right-of-way, there are no possible lane configurations that would fully mitigate the impact of the westbound approach. Therefore, the impact remains significant and unavoidable.

16. Main Street & Olympic Drive

This intersection is impacted during the AM and weekend midday peak hours under Approval Year (2020) Plus Project and Future Year (2025) Plus Project traffic conditions. The addition of Project-generated trips at this location increases overall intersection delay. The critical movement occurs in the westbound or eastbound approach. During the AM peak hour, the northbound approach experiences a similarly saturated condition, with a high volume of right turns sharing a lane. There are no mitigation measures that would fully mitigate the impact. Therefore, the impact remains significant and unavoidable.



19. 4th Street & Arizona Avenue

This intersection is impacted during the PM and weekend midday peak hour under Future Year (2025) Plus Project traffic conditions. The westbound approach is impacted by the addition of Project-generated trips, due to a single-lane approach to accommodate all movements. A possible mitigation is to remove on-street metered parking and the bicycle lane on the northern side of Arizona Avenue and re-stripe the approach to a shared through-right and shared through-left lane. This mitigation would improve the intersection's delay to better than the No Project traffic conditions during all peak hours under Future Year (2025) Plus Project traffic conditions. However, removing the bicycle lane conflicts with the City policy to encourage walking and bicycling in the City. In addition, such mitigation may displace or reduce use of alternative transportation modes that help reduce VMT and those could conflict with the purpose and intent of SB 743. Therefore, the impact remains significant and unavoidable.



6. PROJECT ALTERNATIVES

In addition to the No Project Alternative, five alternatives to the project were evaluated to determine their potential impacts on the surrounding transportation system as compared to the proposed Project. Trip generation for each of the alternatives was estimated and compared with that of the proposed Project, and a qualitative assessment of potential traffic impacts was made. A quantitative analysis of each alternative was not prepared as part of this study. The alternatives to the proposed Project are described below:

1. **No Project.** Under the “No Project” alternative, the proposed redevelopment of the Ocean Avenue Parcel and the 2nd Street Parcel would not occur. The existing uses and surface parking lot would remain and operations would remain the same.
2. **Tier 2 Mixed-Use Housing Projects Compliant with Ocean Transition and Bayside Conservation District.** Alternative 2 assumes a 50-foot height limit and 2.75 FAR for the Ocean Transition zone and a 60-foot height limit and 3.5 FAR for the Bayside Conservation District. In this alternative, 1st Court would not be vacated. In comparison with the proposed Project, there would be 50 more housing units, increased retail and restaurant space, addition of office space, no hotel, no Cultural Use Campus, no public observation deck, and substantially less open space with no publicly-accessible open space provided.
3. **Reduced Height and Density.** This alternative assumes a maximum building height of 84 feet. The proposed Project would include 91 residential units, which is fewer than the proposed Project. The proposed hotel would include 65 residential units, which is fewer than the proposed Project.
4. **Retention of Existing City-Designated Landmarks and 101 Santa Monica Boulevard.** Under this alternative, the existing City-designated landmarks located at 1333 and 1337 Ocean Avenue would remain in their current locations and the building located at 101 Santa Monica Boulevard would also remain in place. 1st Court would not be vacated. In comparison with the proposed Project, there would be 20 less housing units, reduced Cultural Use Campus, increased retail and restaurant space, and the addition of office space. No hotel would be provided and there would be substantially less ground floor open space. This alternative would also not include an observation deck.
5. **Revised Circulation Alternative.** This alternative would include the development of the uses similar to the proposed Project; however, the circulation plan would be revised to address City concerns related to potential vehicle drop-off along Ocean Avenue. Under this alternative, a driveway into the Project site along Ocean Avenue would be added to provide entry into the subterranean garage.



ESTIMATED TRIP GENERATION FOR PROJECT ALTERNATIVES

The trip generation of each of the alternatives was estimated using the same methodology that was used for the proposed Project. The resulting trip generation estimates for each alternative are shown in Tables 7 to 9. Table 10 compares trips generated by the proposed Project with the five project alternatives. The estimated trip generation of each alternative is summarized below.

- Alternative 1 – Under this alternative, the project would not be constructed, and there would be no new trips generated to or from the Project site. Existing uses would continue to generate trips.
- Alternative 2 – The trip generation for Alternative 2 would be 35% to 65% higher than that of the proposed Project during each of the analyzed peak hours. The higher trip generation is due to the increases in retail/restaurant uses in this alternative. As shown in Table 7, this alternative is expected to generate a net increase of 3,694 daily weekday trips, 198 trips in the AM peak hour, 240 trips in the PM peak hour, and 252 trips in the weekend midday peak hour.
- Alternative 3 – The trip generation for Alternative 3 would be 12% to 16% lower than that of the proposed Project during each of the analyzed peak hours. As shown in Table 8, this alternative is expected to generate a net increase of 1,809 weekday daily trips, 127 trips in the AM peak hours, 123 trips in the PM peak hour, and 148 trips in the weekend midday peak hour.
- Alternative 4 – The trip generation for Alternative 4 would be 15% to 36% higher than that of the proposed Project during each of the analyzed peak hours. The higher trip generation is due to the increases in retail/restaurant uses in this alternative. As shown in Table 9, this alternative is expected to generate a net increase of 2,956 daily weekday trips, 170 trips in the AM peak hour, 199 trips in the PM peak hour, and 222 trips in the weekend midday peak hour.
- Alternative 5 – The trip generation for Alternative 5 would be the same to that of the proposed Project.



**TABLE 7
OCEAN AVENUE PROJECT
APPROVAL YEAR (2020) AND FUTURE YEAR (2025) TRIP GENERATION ESTIMATES - ALTERNATIVE 2**

Land Use	Size	Daily Rate	AM Peak Hour			PM Peak Hour			Weekend Midday Pk Hr			Weekday Trips	AM Peak Hour Trips			PM Peak Hour Trips			Weekend Midday Pk Hr Trip		
			Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total	In	Out	Total
PROPOSED PROJECT ALTERNATIVE 2																					
Residential - Studio Units [a, b]	14 DU	1.49	0.09	23%	77%	0.1	63%	77%	0.1	50%	50%	21	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, b]	82 DU	3	0.18	23%	77%	0.21	63%	77%	0.21	50%	50%	246	3	12	15	11	6	17	9	8	17
Residential - Two-Bedroom Units [a, b]	35 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	180	3	8	11	8	4	12	6	6	12
Residential - Three-Bedroom Units [a, b]	19 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	98	1	5	6	4	3	7	4	3	7
Retail [c]	23.74 KSF	29.31	1.29	62%	38%	1.97	48%	52%	1.97	52%	48%	696	19	12	31	23	24	47	24	23	47
Restaurant [d]	46.09 KSF	78.75	3.50	55%	45%	5.28	62%	38%	5.28	50%	50%	3,630	89	72	161	151	92	243	122	121	243
Commercial Office [e]	4.08 KSF	9.50	0.70	86%	14%	0.79	16%	84%	0.79	54%	46%	39	3	0	3	0	3	3	2	1	3
Medical Office [f]	4.88 KSF	28.50	2.07	78%	22%	2.29	28%	72%	2.29	57%	43%	139	8	2	10	3	8	11	6	5	11
Salon [o]	0.35 KSF	40.00	1.21	100%	0%	1.45	17%	83%	5.08	36%	64%	14	0	0	0	0	1	1	1	1	2
Cultural Uses [g]	0.00 KSF	7.26	0.68	91%	9%	0.80	15%	85%	1.28	51%	49%	0	0	0	0	0	0	0	0	0	0
Public Open Space [h]	0.00 ACRES	50.00	6.43	50%	50%	4.46	52%	48%	2.32	62%	38%	0	0	0	0	0	0	0	0	0	0
Hotel [i]	0 ROOMS	4.90	0.31	49%	51%	0.34	51%	49%	0.31	50%	50%	0	0	0	0	0	0	0	0	0	0
TOTAL PROJECT TRIPS											5,063	126	112	238	201	141	342	175	168	343	
EXISTING LAND USES																					
Residential - Studio Units [a, j]	12 DU	1.51	0.09	23%	77%	0.11	63%	77%	0.11	50%	50%	18	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, j]	7 DU	3.03	0.19	23%	77%	0.22	63%	77%	0.21	50%	50%	21	0	1	1	1	1	2	1	0	1
Restaurant [k]	12.39 KSF	79.27	0.93	55%	45%	5.50	62%	38%	6.27	50%	50%	982	7	5	12	42	26	68	39	39	78
Commercial Office [l]	14.01 KSF	9.74	0.83	86%	14%	0.91	16%	84%	0.10	54%	46%	136	10	2	12	2	11	13	1	0	1
Medical Office [m]	4.900 KSF	29.22	2.46	78%	22%	2.64	28%	72%	0.48	57%	43%	143	9	3	12	4	9	13	1	1	2
Medical Spa [n]	0.730 KSF	29.22	1.31	51%	49%	3.45	57%	43%	3.19	49%	51%	21	1	0	1	2	1	3	1	1	2
Salon [o]	1.200 KSF	40.00	1.21	100%	0%	1.45	17%	83%	5.08	36%	64%	48	1	0	1	0	2	2	2	4	6
TOTAL EXISTING TRIPS											(1,369)	(28)	(12)	(40)	(52)	(50)	(102)	(46)	(45)	(91)	
NET INCREMENTAL TRIPS											3,694	97	101	198	150	91	240	129	123	252	

Notes: Proposed land uses based on applicant's information and other conversations.
Existing land uses were fully occupied in July 2017, when baseline traffic counts were collected.
As described in the *Santa Monica Travel Demand Forecasting Model (TDFM) Trip Generation Rates*, Santa Monica TDFM trip generation rates for residential, retail and restaurant space incorporate internal capture and pass-by trips.
It is assumed that the car-ownership per household for studio multi-family residential land use types is zero cars, one-bedroom multi-family residential land use types is one car, while the car-ownership per household for two- bedroom and three-bedroom multi-family residential land use types is two or more cars.
[a] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[b] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #820 Shopping Center, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[c] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[d] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #710 General Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[e] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[f] Trip generation was sourced from trip generation rates that were developed for six museum/cultural use spaces in Southern California, including a range of types such as art museums, historical museums, and children's museums. The rates and in/out splits for all six museums were averaged together to develop a conservative estimate for this site in the absence of a specific program identified for the cultural use space.
[g] Trip generation rate from "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002
[h] Trip generation is empirically derived from observations at six other hotels in the downtown Santa Monica area. The trip generation and in/out splits were observed for each hotel on an average weekday during the AM and PM peak hours, and an average weekend midday peak hour while the hotels were near 100% occupancy. The rates and in/out splits reflect the average of all observations.
[i] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[j] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The AM trip rates are reduced to reflect that most existing restaurants are not open during the AM peak hour, but employees and vendors are likely to be making trips during that time.
[k] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #710 General Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[l] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[m] Trip generation and in/out splits for project land use are applied from #492 Health/Fitness Club, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The daily rate is assumed to be the same as #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
[n] Trip generation and in/out splits for project land use are applied from #918 Hair Salon, Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE), 2012. The ITE Trip Generation manual does not include a daily rate. The daily rate is based on a phone survey of the existing salon's average number of daily appointments.

**TABLE 8
OCEAN AVENUE PROJECT
APPROVAL YEAR (2020) AND FUTURE YEAR (2025) TRIP GENERATION ESTIMATES - ALTERNATIVE 3**

Land Use	Size	Daily Rate	AM Peak Hour			PM Peak Hour			Weekend Midday Pk Hr			Weekday Trips	AM Peak Hour Trips			PM Peak Hour Trips			Weekend Midday Pk Hr Trip		
			Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total	In	Out	Total
PROPOSED PROJECT ALTERNATIVE 3																					
Residential - Studio Units [a, b]	13 DU	1.49	0.09	23%	77%	0.1	63%	77%	0.1	50%	50%	19	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, b]	44 DU	3	0.18	23%	77%	0.21	63%	77%	0.21	50%	50%	132	2	6	8	6	3	9	5	4	9
Residential - Two-Bedroom Units [a, b]	22 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	113	2	5	7	5	3	8	4	4	8
Residential - Three-Bedroom Units [a, b]	12 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	62	1	3	4	3	1	4	2	2	4
Retail [c]	12.04 KSF	29.31	1.29	62%	38%	1.97	48%	52%	1.97	52%	48%	353	10	6	16	12	12	24	12	12	24
Restaurant [d]	24.07 KSF	78.75	3.50	55%	45%	5.28	62%	38%	5.28	50%	50%	1,896	46	38	84	79	48	127	64	63	127
Cultural Uses [e]	35.50 KSF	7.26	0.68	91%	9%	0.80	15%	85%	1.28	51%	49%	258	22	2	24	4	24	28	23	22	45
Public Open Space [f]	0.51 ACRES	50.00	6.43	50%	50%	4.46	52%	48%	2.32	62%	38%	26	2	1	3	1	1	2	1	0	1
Hotel [g]	65 ROOMS	4.90	0.31	49%	51%	0.34	51%	49%	0.31	50%	50%	319	10	10	20	11	11	22	10	10	20
TOTAL PROJECT TRIPS											3,178	95	72	167	122	103	225	122	117	239	
EXISTING LAND USES																					
Residential - Studio Units [a, h]	12 DU	1.51	0.09	23%	77%	0.11	63%	77%	0.11	50%	50%	18	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, h]	7 DU	3.03	0.19	23%	77%	0.22	63%	77%	0.21	50%	50%	21	0	1	1	1	1	2	1	0	1
Restaurant [i]	12.39 KSF	79.27	0.93	55%	45%	5.50	62%	38%	6.27	50%	50%	982	7	5	12	42	26	68	39	39	78
Commercial Office [j]	14.01 KSF	9.74	0.83	86%	14%	0.91	16%	84%	0.10	54%	46%	136	10	2	12	2	11	13	1	0	1
Medical Office [k]	4.900 KSF	29.22	2.46	78%	22%	2.64	28%	72%	0.48	57%	43%	143	9	3	12	4	9	13	1	1	2
Medical Spa [l]	0.730 KSF	29.22	1.31	51%	49%	3.45	57%	43%	3.19	49%	51%	21	1	0	1	2	1	3	1	1	2
Salon [m]	1.200 KSF	40.00	1.21	100%	0%	1.45	17%	83%	5.08	36%	64%	48	1	0	1	0	2	2	2	4	6
TOTAL EXISTING TRIPS											(1,369)	(28)	(12)	(40)	(52)	(50)	(102)	(46)	(45)	(91)	
NET INCREMENTAL TRIPS											1,809	67	60	127	70	53	123	76	72	148	

Notes: Proposed land uses based on applicant's information and other conversations.
Existing land uses were fully occupied in July 2017, when baseline traffic counts were collected.
As described in the *Santa Monica Travel Demand Forecasting Model (TDFM) Trip Generation Rates*, Santa Monica TDFM trip generation rates for residential, retail and restaurant space incorporate internal capture and pass-by trips.
It is assumed that the car-ownership per household for studio multi-family residential land use types is zero cars, one-bedroom multi-family residential land use types is one car, while the car-ownership per household for two- bedroom and three-bedroom multi-family residential land use types is two or more cars.

[a] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[b] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #820 Shopping Center, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[c] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[d] Trip generation was sourced from trip generation rates that were developed for six museum/cultural use spaces in Southern California, including a range of types such as art museums, historical museums, and children's museums. The rates and in/out splits for all six museums were averaged together to develop a conservative estimate for this site in the absence of a specific program identified for the cultural use space.

[e] Trip generation rate from "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002

[f] Trip generation is empirically derived from observations at six other hotels in the downtown Santa Monica area. The trip generation and in/out splits were observed for each hotel on an average weekday during the AM and PM peak hours, and an average weekend midday peak hour while the hotels were near 100% occupancy. The rates and in/out splits reflect the average of all observations.

[g] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[h] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The AM trip rates are reduced to reflect that most existing restaurants are not open during the AM peak hour, but employees and vendors are likely to be making trips during that time.

[i] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #710 General Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[j] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[k] Trip generation and in/out splits for project land use are applied from #492 Health/Fitness Club, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The daily rate is assumed to be the same as #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

[l] Trip generation and in/out splits for project land use are applied from #918 Hair Salon, Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE), 2012. The ITE Trip Generation manual does not include a daily rate. The daily rate is based on a phone survey of the existing salon's average number of daily appointments.

**TABLE 9
OCEAN AVENUE PROJECT
APPROVAL YEAR (2020) AND FUTURE YEAR (2025) TRIP GENERATION ESTIMATES - ALTERNATIVE 4**

Land Use	Size	Daily Rate	AM Peak Hour			PM Peak Hour			Weekend Midday Pk Hr			Weekday Trips	AM Peak Hour Trips			PM Peak Hour Trips			Weekend Midday Pk Hr Trip		
			Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out		In	Out	Total	In	Out	Total	In	Out	Total
PROPOSED PROJECT ALTERNATIVE 4																					
Residential - Studio Units [a, b]	13 DU	1.49	0.09	23%	77%	0.1	63%	77%	0.1	50%	50%	19	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, b]	42 DU	3	0.18	23%	77%	0.21	63%	77%	0.21	50%	50%	126	2	6	8	6	3	9	5	4	9
Residential - Two-Bedroom Units [a, b]	16 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	82	1	4	5	4	2	6	3	3	6
Residential - Three-Bedroom Units [a, b]	9 DU	5.14	0.32	23%	77%	0.35	63%	77%	0.35	50%	50%	46	1	2	3	2	1	3	2	1	3
Retail [c]	20.58 KSF	29.31	1.29	62%	38%	1.97	48%	52%	1.97	52%	48%	603	17	10	27	20	21	41	21	20	41
Restaurant [d]	39.95 KSF	78.75	3.50	55%	45%	5.28	62%	38%	5.28	50%	50%	3,146	77	63	140	131	80	211	106	105	211
Commercial Office [e]	12.00 KSF	9.50	0.70	86%	14%	0.79	16%	84%	0.79	54%	46%	114	7	1	8	1	8	9	5	4	9
Cultural Uses [f]	26.04 KSF	7.26	0.68	91%	9%	0.80	15%	85%	1.28	51%	49%	189	16	2	18	3	18	21	17	16	33
Public Open Space [g]	0.00 ACRES	50.00	6.43	50%	50%	4.46	52%	48%	2.32	62%	38%	0	0	0	0	0	0	0	0	0	0
Hotel [h]	0 ROOMS	4.90	0.31	49%	51%	0.34	51%	49%	0.31	50%	50%	0	0	0	0	0	0	0	0	0	0
TOTAL PROJECT TRIPS											4,325	121	89	210	168	133	301	160	153	313	
EXISTING LAND USES																					
Residential - Studio Units [a, i]	12 DU	1.51	0.09	23%	77%	0.11	63%	77%	0.11	50%	50%	18	0	1	1	1	0	1	1	0	1
Residential - One-Bedroom Units [a, i]	7 DU	3.03	0.19	23%	77%	0.22	63%	77%	0.21	50%	50%	21	0	1	1	1	1	2	1	0	1
Restaurant [j]	12.39 KSF	79.27	0.93	55%	45%	5.50	62%	38%	6.27	50%	50%	982	7	5	12	42	26	68	39	39	78
Commercial Office [k]	14.01 KSF	9.74	0.83	86%	14%	0.91	16%	84%	0.10	54%	46%	136	10	2	12	2	11	13	1	0	1
Medical Office [l]	4.900 KSF	29.22	2.46	78%	22%	2.64	28%	72%	0.48	57%	43%	143	9	3	12	4	9	13	1	1	2
Medical Spa [m]	0.730 KSF	29.22	1.31	51%	49%	3.45	57%	43%	3.19	49%	51%	21	1	0	1	2	1	3	1	1	2
Salon [n]	1.200 KSF	40.00	1.21	100%	0%	1.45	17%	83%	5.08	36%	64%	48	1	0	1	0	2	2	2	4	6
TOTAL EXISTING TRIPS											(1,369)	(28)	(12)	(40)	(52)	(50)	(102)	(46)	(45)	(91)	
NET INCREMENTAL TRIPS											2,956	93	77	170	116	83	199	114	108	222	

Notes: Proposed land uses based on applicant's information and other conversations.
 Existing land uses were fully occupied in July 2017, when baseline traffic counts were collected.
 As described in the *Santa Monica Travel Demand Forecasting Model (TDFM) Trip Generation Rates*, Santa Monica TDM trip generation rates for residential, retail and restaurant space incorporate internal capture and pass-by trips.
 [a] It is assumed that the car-ownership per household for studio multi-family residential land use types is zero cars, one-bedroom multi-family residential land use types is one car, while the car-ownership per household for two- bedroom and three-bedroom multi-family residential land use types is two or more cars.
 [b] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [c] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #820 Shopping Center, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [d] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [e] Trip generation for project land use in 2030 from TDFM (Area Type 1), with Expo reduction from Table 18 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #710 General Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [f] Trip generation was sourced from trip generation rates that were developed for six museum/cultural use spaces in Southern California, including a range of types such as art museums, historical museums, and children's museums. The rates and in/out splits for all six museums were averaged together to develop a conservative estimate for this site in the absence of a specific program identified for the cultural use space.
 [g] Trip generation rate from "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002.
 [h] Trip generation is empirically derived from observations at six other hotels in the downtown Santa Monica area. The trip generation and in/out splits were observed for each hotel on an average weekday during the AM and PM peak hours, and an average weekend midday peak hour while the hotels were near 100% occupancy. The rates and in/out splits reflect the average of all observations.
 [i] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #220 Multifamily Housing, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [j] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 3 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LRT; in/out splits are applied from #932 High-Turnover Restaurant, Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The AM trip rates are reduced to reflect that most existing restaurants are not open during the AM peak hour, but employees and vendors are likely to be making trips during that time.
 [k] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #710 General Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [l] Trip generation for project land use in 2020 from TDFM (Area Type 1), with Expo reduction from Table 8 in Santa Monica Travel Demand Forecasting Model Trip Generation Rates, is used so that rates account for LUCE TDM measures and proximity to the Expo LR; in/out splits are applied from #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [m] Trip generation and in/out splits for project land use are applied from #492 Health/Fitness Club, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017. The daily rate is assumed to be the same as #720 Medical-Dental Office Building, Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.
 [n] Trip generation and in/out splits for project land use are applied from #918 Hair Salon, Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE), 2012. The ITE Trip Generation manual does not include a daily rate. The daily rate is based on a phone survey of the existing salon's average number of daily appointments.

**TABLE 10
OCEAN AVENUE PROJECT
PROJECT ALTERNATIVES TRIP GENERATION COMPARISON**

Land Use	Weekday Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips			WKND Peak Hour Trips		
		In	Out	Total	In	Out	Total	In	Out	Total
Proposed Project NET NEW TRIPS	2,110	75	71	146	83	63	146	86	82	168
Alternative 1 - No Project NET NEW TRIPS	0	0	0	0	0	0	0	0	0	0
% Change: Alt 1 vs. Proposed Project	100%			100%			100%			100%
Alternative 2 NET NEW TRIPS	3,694	97	101	198	150	91	240	129	123	252
% Change: Alt 2 vs. Proposed Project	75%			36%			64%			50%
Alternative 3 NET NEW TRIPS	1,809	67	60	127	70	53	123	76	72	148
% Change: Alt 3 vs. Proposed Project	-14%			-13%			-16%			-12%
Alternative 4 NET NEW TRIPS	2,956	93	77	170	116	83	199	114	108	222
% Change: Alt 4 vs. Proposed Project	40%			16%			36%			32%
Alternative 5 NET NEW TRIPS	2,101	75	71	146	83	62	145	86	81	167
% Change: Alt 5 vs. Proposed Project	0%			0%			-1%			-1%

POTENTIAL TRAFFIC IMPACTS OF PROJECT ALTERNATIVES

Based on the projected trip generation of the proposed alternatives and a review of the incremental changes in delay and V/C under the proposed Project, the following general conclusions can be made with regard to anticipated traffic impacts:

- Alternative 1 – By definition, no traffic impacts would occur under this alternative, as no new development and associated vehicle trips would occur on the Project site.
- Alternative 2 – Under Approval Year (2020) conditions, impacts would occur at the same intersections found under the proposed Project, and the severity of those impacts would be greater. An additional impact would occur at the intersection of 2nd Street & Santa Monica Boulevard during the weekend midday peak hour. Under Future Year (2025) conditions, the severity of impacts that would occur would be slightly greater than that of the proposed Project. There would be an additional impact at the intersection of Lincoln Boulevard & Colorado Avenue during the AM peak hour.
- Alternative 3 – Under Future Year (2025) conditions, the significant impact at the intersection of 2nd Street & Arizona Avenue during the weekend midday peak hour would not be expected to occur. All other impacts under Approval Year (2020) and Future Year (2025) would remain the same, however the severity of the impacts that occur with the proposed Project would be reduced but still be considered significant. No additional significant impacts would occur under this alternative.
- Alternative 4 – Under Approval Year (2020) conditions, impacts would occur at the same intersections found under the proposed Project, and the severity of those impacts would be greater. An additional impact would occur at the intersection of 2nd Street & Santa Monica Boulevard during the weekend midday peak hour. Under Future Year (2025) conditions, the severity of impacts that would occur would be slightly greater than that of the proposed Project. There would be an additional impact at the intersection of Lincoln Boulevard & Colorado Avenue during the AM peak hour.
- Alternative 5 - This alternative would generate the same level of trips as the proposed Project but includes an additional driveway for access to the parking garage on Ocean Avenue. However, the addition of the driveway on Ocean Avenue is not expected to divert vehicles away from impacted intersections. The diverted traffic is also not anticipated to impact any additional intersections. Therefore, each of the significant impacts that would occur with the proposed Project would also occur with Alternative 5.



Ocean Avenue Project Transportation Impact Analysis
April 2020

As summarized in Table 11, Alternative 1 would avoid all of the significant intersection impacts associated with the proposed Project. Under Alternatives 2 and 4, there would be one additional significant intersection impact in the Approval Year (2020) and Future Year (2025) compared with the proposed Project. Under Alternative 3, there would be one less significant intersection impact in the Future Year (2025) compared with the proposed Project, though the number and location of significant intersection impacts under Approval Year (2020) conditions would be unchanged. The number and location of significant impacts for Alternative 5 would remain the same under Approval Year (2020) and Future Year (2025) traffic conditions.



**TABLE 11
OCEAN AVENUE PROJECT
SUMMARY OF PROJECT AND ALTERNATIVES INTERSECTION IMPACTS**

No.	INTERSECTION	PEAK HOUR	APPROVAL YEAR (2020)					FUTURE YEAR (2025)				
			Proposed Project	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Proposed Project	Alt. 2	Alt. 3	Alt. 4	Alt. 5
1	PALISADES BEACH ROAD & CALIFORNIA AVENUE	AM PM WKND	X	X	X	X	X	X	X	X	X	X
2	OCEAN AVENUE & CALIFORNIA AVENUE	AM PM WKND	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X
11	SECOND STREET & WILSHIRE BOULEVARD	AM PM WKND	X	X	X	X	X					
12	SECOND STREET & ARIZONA AVENUE	AM PM WKND						X	X		X	X
13	SECOND STREET & SANTA MONICA BOULEVARD	AM PM WKND		X		X		X	X	X	X	X
16	MAIN STREET & OLYMPIC DRIVE	AM PM WKND	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X	X X X
19	FOURTH STREET & ARIZONA AVENUE	AM PM WKND						X X	X X	X X	X X	X X
38	LINCOLN BOULEVARD & COLORADO AVENUE	AM PM WKND							X		X	
Total Impacted Intersections:			4	5	4	5	4	6	7	5	7	4

REFERENCES

- California African American Museum Traffic Analysis*, Fehr & Peers, August 2009.
- City of Santa Monica Bike Action Plan*, City of Santa Monica, October 2011.
- Highway Capacity Manual*, Transportation Research Board, 2010.
- Mixed-Use Ocean Avenue Project Shared Parking Study*, Walker Consultants, 2019.
- OCMA – Residential Project Traffic Impact Analysis*, DKS Associates, April 2016.
- The Plaza at Santa Monica Transportation Impact Analysis*, Fehr & Peers, October 2018.
- Santa Monica Land Use & Circulation Element*, revised July 25, 2017.
- Santa Monica Travel Demand Forecasting Model Trip Generation Rates*, October 2011.
- TCRP 95 Chapter 19 Employer and Institutional TDM Strategies*, Transportation Research Board, 2010.
- Technical Advisory on Evaluating Transportation Impacts in CEQA*, California Governor's Offices of Planning and Research, December 2018
- Traffic and Parking Analysis for the Children's Museum of Santa Barbara Project*, Associated Transportation Engineers, April 2011.
- Traffic Impact Study for Simon Wiesenthal Center Museum of Tolerance*, Crain & Associates, October 2008.
- Traffic Study for the Building for the Permanent Collection of the Los Angeles County Museum of Art Project*, Gibson Transportation Consulting, September 2017.
- Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017.



**APPENDIX A:
CITY OF SANTA MONICA TRAFFIC COUNTS**

**APPENDIX B1:
STUDY INTERSECTION LANE CONFIGURATION
AND TRAFFIC VOLUMES**

EXISTING CONDITIONS

APPROVAL YEAR (2020) NO PROJECT CONDITIONS

APPROVAL YEAR (2020) PLUS PROJECT CONDITIONS

FUTURE (2025) NO PROJECT CONDITIONS

FUTURE (2025) PLUS PROJECT CONDITIONS

**APPENDIX B2:
STUDY INTERSECTION LEVEL OF SERVICE WORKSHEETS**

EXISTING CONDITIONS

APPROVAL YEAR (2020) NO PROJECT CONDITIONS

APPROVAL YEAR (2020) PLUS PROJECT CONDITIONS

FUTURE (2025) NO PROJECT CONDITIONS

FUTURE (2025) PLUS PROJECT CONDITIONS

**APPENDIX C:
SANTA MONICA TRAVEL DEMAND FORECASTING MODEL
DOCUMENTATION**

**APPENDIX D1:
APPROVAL YEAR (2020) CUMULATIVE PROJECTS**

**APPENDIX D2:
FUTURE YEAR (2025) CUMULATIVE PROJECTS**

**APPENDIX A:
CITY OF SANTA MONICA TRAFFIC COUNTS**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Pacific Coast
EAST & WEST: California Incline

PROJECT #: SC1532
LOCATION #: 001
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">PM NB queue. NR illegal</p>	AM		▲	
	PM		N	
	MD	◀ W	S	E ▶
	OTHER		▼	
	OTHER			

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Pacific Coast			Pacific Coast			California Incline			California Incline			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	3	X	1	3	0	0	1	0	0.5	0.5	1	

AM	7:30 AM	2	733	0	72	832	3	2	0	3	63	3	61	1,774
	7:45 AM	4	690	2	67	933	5	2	0	3	67	1	69	1,843
	8:00 AM	3	566	0	71	839	3	0	1	1	65	4	53	1,606
	8:15 AM	1	580	0	87	848	12	0	3	2	54	5	57	1,649
	8:30 AM	4	554	0	108	835	6	0	5	3	52	2	45	1,614
	8:45 AM	6	535	0	120	790	7	1	2	7	60	4	50	1,582
	9:00 AM	7	464	0	92	784	4	1	0	5	43	2	53	1,455
	9:15 AM	3	486	0	87	832	2	2	4	7	45	5	68	1,541
	VOLUMES	30	4,608	2	704	6,693	42	8	15	31	449	26	456	13,064
	APPROACH %	1%	99%	0%	9%	90%	1%	15%	28%	57%	48%	3%	49%	
APP/DEPART	4,640	/	5,072	7,439	/	7,174	54	/	721	931	/	97	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	10	2,569	2	297	3,452	23	4	4	9	249	13	240	6,872	
APPROACH %	0%	100%	0%	8%	92%	1%	24%	24%	53%	50%	3%	48%		
PEAK HR FACTOR	0.878			0.938			0.850			0.916			0.932	
APP/DEPART	2,581	/	2,813	3,772	/	3,711	17	/	303	502	/	45	0	
PM	5:00 PM	12	488	0	70	556	6	7	1	6	31	3	93	1,273
	5:15 PM	10	659	0	51	553	9	3	1	2	21	3	63	1,375
	5:30 PM	5	659	0	49	637	10	2	2	3	15	5	42	1,429
	5:45 PM	8	636	1	107	529	2	3	0	4	15	8	82	1,395
	6:00 PM	6	555	0	73	555	3	0	1	4	26	5	94	1,322
	6:15 PM	6	635	0	78	514	5	0	0	2	28	7	67	1,342
	6:30 PM	10	688	0	85	510	3	3	0	2	23	1	62	1,387
	6:45 PM	4	577	0	76	518	4	4	1	2	28	0	96	1,310
	VOLUMES	61	4,897	1	589	4,372	42	22	6	25	187	32	599	10,833
	APPROACH %	1%	99%	0%	12%	87%	1%	42%	11%	47%	23%	4%	73%	
APP/DEPART	4,959	/	5,518	5,003	/	4,585	53	/	596	818	/	134	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	29	2,509	1	280	2,274	24	8	4	13	77	21	281	5,521	
APPROACH %	1%	99%	0%	11%	88%	1%	32%	16%	52%	20%	6%	74%		
PEAK HR FACTOR	0.949			0.926			0.893			0.758			0.966	
APP/DEPART	2,539	/	2,798	2,578	/	2,364	25	/	285	379	/	74	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: California

PROJECT #: SC1532
LOCATION #: 002
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			California			California			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	1	0.5	0.5	1	0	2	0	
7:30 AM	44	107	19	4	83	49	6	30	47	5	30	2	426
7:45 AM	57	116	37	3	93	47	5	13	47	11	33	13	475
8:00 AM	33	110	25	2	100	47	8	19	49	5	40	15	453
8:15 AM	31	87	18	2	126	54	8	25	60	13	36	11	471
8:30 AM	33	79	16	2	118	48	12	25	69	9	38	5	454
8:45 AM	34	93	12	3	128	37	14	32	72	12	26	16	479
9:00 AM	36	88	22	1	118	44	11	28	56	11	26	10	451
9:15 AM	42	75	10	5	112	41	14	33	47	9	33	9	430
VOLUMES	310	755	159	22	878	367	78	205	447	75	262	81	3,639
APPROACH %	25%	62%	13%	2%	69%	29%	11%	28%	61%	18%	63%	19%	
APP/DEPART	1,224	/	914	1,267	/	1,400	730	/	386	418	/	939	0
BEGIN PEAK HR	8:00 AM												
VOLUMES	131	369	71	9	472	186	42	101	250	39	140	47	1,857
APPROACH %	23%	65%	12%	1%	71%	28%	11%	26%	64%	17%	62%	21%	
PEAK HR FACTOR	0.850			0.916			0.833			0.942			0.969
APP/DEPART	571	/	458	667	/	761	393	/	181	226	/	457	0
5:00 PM	66	123	22	4	103	20	8	22	34	22	29	17	470
5:15 PM	63	119	25	6	136	7	11	14	34	16	21	18	470
5:30 PM	63	136	21	6	100	17	12	14	21	15	14	15	434
5:45 PM	56	132	22	4	105	16	16	26	56	13	24	25	495
6:00 PM	60	148	33	5	103	12	18	23	35	20	29	17	503
6:15 PM	49	128	16	10	124	27	11	28	48	10	31	16	498
6:30 PM	60	118	33	7	102	19	14	36	49	11	29	11	489
6:45 PM	67	123	29	4	80	18	16	23	34	13	20	16	443
VOLUMES	484	1,027	201	46	853	136	106	186	311	120	197	135	3,802
APPROACH %	28%	60%	12%	4%	82%	13%	18%	31%	52%	27%	44%	30%	
APP/DEPART	1,712	/	1,268	1,035	/	1,285	603	/	433	452	/	816	0
BEGIN PEAK HR	5:45 PM												
VOLUMES	225	526	104	26	434	74	59	113	188	54	113	69	1,985
APPROACH %	26%	62%	12%	5%	81%	14%	16%	31%	52%	23%	48%	29%	
PEAK HR FACTOR	0.887			0.829			0.909			0.894			0.987
APP/DEPART	855	/	654	534	/	677	360	/	243	236	/	411	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Wilshire

PROJECT #: SC1532
LOCATION #: 003
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	0	1	2	X	X	X	X	1.5	X	1.5	

AM	7:30 AM	1	148	41	45	93	0	0	0	0	15	0	33	376
	7:45 AM	0	165	45	39	109	0	0	0	0	33	0	42	433
	8:00 AM	0	135	57	43	117	0	0	0	0	49	0	25	426
	8:15 AM	0	103	54	58	141	0	0	0	0	29	0	33	418
	8:30 AM	0	99	68	55	135	0	0	0	0	45	0	30	432
	8:45 AM	0	114	68	56	164	0	0	0	0	33	0	23	458
	9:00 AM	0	114	44	47	133	0	0	0	0	32	0	36	406
	9:15 AM	0	89	46	49	120	0	0	0	0	40	0	46	390
	VOLUMES	1	967	423	392	1,012	0	0	0	0	276	0	268	3,339
	APPROACH %	0%	70%	30%	28%	72%	0%	0%	0%	0%	51%	0%	49%	
APP/DEPART	1,391	/	1,236	1,404	/	1,289	0	/	814	544	/	0	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	451	247	212	557	0	0	0	0	156	0	111	1,734	
APPROACH %	0%	65%	35%	28%	72%	0%	0%	0%	0%	58%	0%	42%		
PEAK HR FACTOR		0.909			0.874			0.000			0.890		0.947	
APP/DEPART	698	/	563	769	/	713	0	/	458	267	/	0	0	
PM	5:00 PM	0	149	30	31	134	0	0	0	0	57	0	53	454
	5:15 PM	0	148	34	31	162	0	0	0	0	59	0	65	499
	5:30 PM	0	158	35	14	108	0	0	0	0	57	0	62	434
	5:45 PM	0	161	49	30	142	0	0	0	0	60	0	57	499
	6:00 PM	0	157	36	29	132	0	0	0	0	58	0	85	497
	6:15 PM	0	142	47	49	145	0	0	0	0	50	0	63	496
	6:30 PM	0	142	29	40	124	0	0	0	0	38	0	61	434
	6:45 PM	0	150	43	26	96	0	0	0	0	39	0	72	426
	VOLUMES	0	1,207	303	250	1,043	0	0	0	0	418	0	518	3,739
	APPROACH %	0%	80%	20%	19%	81%	0%	0%	0%	0%	45%	0%	55%	
APP/DEPART	1,510	/	1,726	1,293	/	1,461	0	/	552	936	/	0	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	0	624	154	104	544	0	0	0	0	234	0	269	1,929	
APPROACH %	0%	80%	20%	16%	84%	0%	0%	0%	0%	47%	0%	53%		
PEAK HR FACTOR		0.926			0.839			0.000			0.879		0.966	
APP/DEPART	778	/	894	648	/	778	0	/	257	503	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 004
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	0	1	2	X	X	X	X	0	X	0	

AM	7:30 AM	0	188	17	13	92	0	0	0	0	5	0	12	327
	7:45 AM	0	199	19	14	119	0	0	0	0	5	0	13	369
	8:00 AM	0	188	25	11	144	0	0	0	0	12	0	11	391
	8:15 AM	0	158	34	17	151	0	0	0	0	5	0	4	369
	8:30 AM	0	152	34	23	151	0	0	0	0	2	0	14	376
	8:45 AM	0	164	28	38	149	0	0	0	0	11	0	11	401
	9:00 AM	0	143	32	25	139	0	0	0	0	14	0	19	372
	9:15 AM	0	116	20	21	140	0	0	0	0	13	0	21	331
	VOLUMES	0	1,308	209	162	1,085	0	0	0	0	67	0	105	2,936
	APPROACH %	0%	86%	14%	13%	87%	0%	0%	0%	0%	39%	0%	61%	
APP/DEPART	1,517	/	1,416	1,247	/	1,152	0	/	368	172	/	0	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	662	121	89	595	0	0	0	0	30	0	40	1,537	
APPROACH %	0%	85%	15%	13%	87%	0%	0%	0%	0%	43%	0%	57%		
PEAK HR FACTOR	0.919			0.914			0.000			0.761			0.958	
APP/DEPART	783	/	703	684	/	625	0	/	209	70	/	0	0	
PM	5:00 PM	1	150	19	13	187	0	0	0	0	35	0	27	432
	5:15 PM	0	152	26	10	208	0	0	0	0	22	0	24	442
	5:30 PM	0	156	20	20	151	0	0	0	0	23	0	26	396
	5:45 PM	0	168	32	24	172	0	0	0	0	26	0	32	454
	6:00 PM	1	156	33	17	168	0	0	0	0	29	0	26	430
	6:15 PM	0	170	25	17	178	0	0	0	0	28	0	22	440
	6:30 PM	1	142	26	19	150	0	0	0	0	27	0	25	390
	6:45 PM	0	156	36	21	121	0	0	0	0	24	0	36	394
	VOLUMES	3	1,250	217	141	1,335	0	0	0	0	214	0	218	3,378
	APPROACH %	0%	85%	15%	10%	90%	0%	0%	0%	0%	50%	0%	50%	
APP/DEPART	1,470	/	1,469	1,476	/	1,552	0	/	357	432	/	0	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	1	626	97	67	718	0	0	0	0	106	0	109	1,724	
APPROACH %	0%	86%	13%	9%	91%	0%	0%	0%	0%	49%	0%	51%		
PEAK HR FACTOR	0.905			0.900			0.000			0.867			0.949	
APP/DEPART	724	/	735	785	/	825	0	/	164	215	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 005
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Santa Monica			Santa Monica			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

	X	2	0	1	2	X	X	X	X	1	X	1	
--	---	---	---	---	---	---	---	---	---	---	---	---	--

AM	7:30 AM	0	195	30	14	84	0	0	0	0	11	0	13	347
	7:45 AM	0	205	29	12	113	0	0	0	0	10	0	11	380
	8:00 AM	0	201	37	12	144	0	0	0	0	17	0	24	435
	8:15 AM	0	177	37	18	137	0	0	0	0	21	0	8	398
	8:30 AM	0	186	32	19	128	0	0	0	0	13	0	17	395
	8:45 AM	0	169	40	30	138	0	0	0	0	15	0	14	406
	9:00 AM	0	164	47	22	127	0	0	0	0	19	0	17	396
	9:15 AM	2	125	41	22	135	0	0	0	0	26	0	13	364
	VOLUMES	2	1,422	293	149	1,006	0	0	0	0	132	0	117	3,121
	APPROACH %	0%	83%	17%	13%	87%	0%	0%	0%	0%	53%	0%	47%	
APP/DEPART	1,717	/	1,539	1,155	/	1,140	0	/	442	249	/	0	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	733	146	79	547	0	0	0	0	66	0	63	1,634	
APPROACH %	0%	83%	17%	13%	87%	0%	0%	0%	0%	51%	0%	49%		
PEAK HR FACTOR	0.923			0.932			0.000			0.787			0.939	
APP/DEPART	879	/	796	626	/	613	0	/	225	129	/	0	0	
PM	5:00 PM	0	149	41	23	205	0	0	0	0	38	0	24	480
	5:15 PM	0	155	33	23	205	0	0	0	0	26	0	26	468
	5:30 PM	1	157	24	11	165	0	0	0	0	34	0	21	413
	5:45 PM	0	177	45	23	172	0	0	0	0	39	0	31	487
	6:00 PM	0	165	40	21	190	0	0	0	0	40	0	35	491
	6:15 PM	0	167	49	26	172	0	0	0	0	43	0	25	482
	6:30 PM	1	143	67	26	156	0	0	0	0	36	0	28	457
	6:45 PM	1	152	44	21	126	0	0	0	0	34	0	44	422
	VOLUMES	3	1,265	343	174	1,391	0	0	0	0	290	0	234	3,700
	APPROACH %	0%	79%	21%	11%	89%	0%	0%	0%	0%	55%	0%	45%	
APP/DEPART	1,611	/	1,500	1,565	/	1,684	0	/	516	524	/	0	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	1	652	201	96	690	0	0	0	0	158	0	119	1,917	
APPROACH %	0%	76%	24%	12%	88%	0%	0%	0%	0%	57%	0%	43%		
PEAK HR FACTOR	0.962			0.931			0.000			0.923			0.976	
APP/DEPART	854	/	772	786	/	849	0	/	296	277	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Nov 7, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Broadway

PROJECT #: SC1532
LOCATION #: 170
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	0	1	2	X	X	X	X	1	X	1	

AM	7:30 AM	0	187	23	9	94	0	0	0	0	6	0	15	334
	7:45 AM	0	238	36	22	136	0	0	0	0	9	0	18	459
	8:00 AM	0	193	32	7	159	0	0	0	0	6	0	16	413
	8:15 AM	0	200	28	12	131	0	0	0	0	14	0	21	406
	8:30 AM	0	199	31	12	135	0	0	0	0	10	0	23	410
	8:45 AM	0	186	45	24	137	0	0	0	0	18	0	28	438
	9:00 AM	0	196	33	17	130	0	0	0	0	7	0	19	402
	9:15 AM	0	170	32	12	124	0	0	0	0	16	0	31	385
	VOLUMES	0	1,569	260	115	1,046	0	0	0	0	86	0	171	3,247
	APPROACH %	0%	86%	14%	10%	90%	0%	0%	0%	0%	33%	0%	67%	
APP/DEPART	1,829	/	1,741	1,161	/	1,132	0	/	374	257	/	0	0	
BEGIN PEAK HR	7:45 AM													
VOLUMES	0	830	127	53	561	0	0	0	0	39	0	78	1,688	
APPROACH %	0%	87%	13%	9%	91%	0%	0%	0%	0%	33%	0%	67%		
PEAK HR FACTOR		0.873			0.925			0.000			0.836		0.919	
APP/DEPART	957	/	908	614	/	600	0	/	180	117	/	0	0	
PM	5:00 PM	0	160	54	35	181	0	0	0	0	23	0	28	481
	5:15 PM	1	154	58	31	166	0	0	0	0	26	0	43	479
	5:30 PM	0	175	52	13	170	0	0	0	0	19	0	28	457
	5:45 PM	0	198	62	26	203	0	0	0	0	27	0	45	561
	6:00 PM	0	176	64	10	199	0	0	0	0	33	0	51	533
	6:15 PM	0	167	65	21	177	0	0	0	0	30	0	46	506
	6:30 PM	1	155	58	26	191	0	0	0	0	20	0	32	483
	6:45 PM	1	111	59	25	193	0	0	0	0	39	0	35	463
	VOLUMES	3	1,296	472	187	1,480	0	0	0	0	217	0	308	3,963
	APPROACH %	0%	73%	27%	11%	89%	0%	0%	0%	0%	41%	0%	59%	
APP/DEPART	1,771	/	1,604	1,667	/	1,700	0	/	659	525	/	0	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	1	696	249	83	770	0	0	0	0	110	0	174	2,083	
APPROACH %	0%	74%	26%	10%	90%	0%	0%	0%	0%	39%	0%	61%		
PEAK HR FACTOR		0.910			0.931			0.000			0.845		0.928	
APP/DEPART	946	/	870	853	/	881	0	/	332	284	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Colorado

PROJECT #: SC1532
LOCATION #: 006
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	X	X	2	0	0.5	X	1.5	0.5	0.5	1	

AM	7:30 AM	2	218	0	0	100	1	1	0	1	12	1	21	357
	7:45 AM	0	219	0	0	105	3	1	0	0	15	0	40	383
	8:00 AM	4	204	0	0	147	2	5	0	4	17	2	33	418
	8:15 AM	0	215	0	0	161	3	3	0	2	25	1	26	436
	8:30 AM	0	187	0	0	133	1	0	0	2	34	4	32	393
	8:45 AM	8	203	0	0	143	2	6	0	2	20	9	35	428
	9:00 AM	3	203	0	0	133	1	3	0	3	18	5	27	396
	9:15 AM	1	173	0	0	151	1	0	0	4	20	2	28	380
	VOLUMES	18	1,622	0	0	1,073	14	19	0	18	161	24	242	3,191
	APPROACH %	1%	99%	0%	0%	99%	1%	51%	0%	49%	38%	6%	57%	
	APP/DEPART	1,640	/	1,882	1,087	/	1,252	37	/	0	427	/	57	0
	BEGIN PEAK HR	8:00 AM												
VOLUMES	12	809	0	0	584	8	14	0	10	96	16	126	1,675	
APPROACH %	1%	99%	0%	0%	99%	1%	58%	0%	42%	40%	7%	53%		
PEAK HR FACTOR	0.955			0.902			0.667			0.850			0.960	
APP/DEPART	821	/	948	592	/	690	24	/	0	238	/	37	0	
PM	5:00 PM	8	168	0	0	218	23	6	0	13	28	3	22	489
	5:15 PM	14	174	0	0	188	26	6	0	14	35	8	32	497
	5:30 PM	14	185	0	0	214	22	5	0	17	28	15	41	541
	5:45 PM	16	203	0	0	198	25	12	0	18	27	11	29	539
	6:00 PM	5	193	0	0	217	20	9	0	27	34	8	30	543
	6:15 PM	8	194	0	0	217	16	9	0	36	33	4	34	551
	6:30 PM	4	201	0	0	196	14	11	0	22	43	12	45	548
	6:45 PM	7	188	0	0	173	6	10	0	18	31	8	32	473
	VOLUMES	76	1,506	0	0	1,621	152	68	0	165	259	69	265	4,181
	APPROACH %	5%	95%	0%	0%	91%	9%	29%	0%	71%	44%	12%	45%	
	APP/DEPART	1,582	/	1,839	1,773	/	2,046	233	/	0	593	/	296	0
	BEGIN PEAK HR	5:45 PM												
VOLUMES	33	791	0	0	828	75	41	0	103	137	35	138	2,181	
APPROACH %	4%	96%	0%	0%	92%	8%	28%	0%	72%	44%	11%	45%		
PEAK HR FACTOR	0.941			0.953			0.800			0.775			0.990	
APP/DEPART	824	/	970	903	/	1,069	144	/	0	310	/	142	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Moomat Ahiko

PROJECT #: SC1532
LOCATION #: 007
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Moomat Ahiko			Moomat Ahiko			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	
	2	2	X	X	2	1	1	X	2	X	X	X	

AM	7:30 AM	115	226	0	0	95	2	5	0	79	0	0	0	522
	7:45 AM	81	211	0	0	116	6	12	0	78	0	0	0	504
	8:00 AM	130	211	0	0	178	13	15	0	87	0	0	0	634
	8:15 AM	110	187	0	0	169	6	13	0	123	0	0	0	608
	8:30 AM	129	183	0	0	164	7	12	0	112	0	0	0	607
	8:45 AM	96	194	0	0	170	4	16	0	134	0	0	0	614
	9:00 AM	94	188	0	0	142	7	10	0	100	0	0	0	541
	9:15 AM	80	171	0	0	174	11	13	0	108	0	0	0	557
	VOLUMES	835	1,571	0	0	1,208	56	96	0	821	0	0	0	4,587
	APPROACH %	35%	65%	0%	0%	96%	4%	10%	0%	90%	0%	0%	0%	
APP/DEPART	2,406	/	1,662	1,264	/	2,029	917	/	0	0	/	896	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	465	775	0	0	681	30	56	0	456	0	0	0	2,463	
APPROACH %	38%	63%	0%	0%	96%	4%	11%	0%	89%	0%	0%	0%		
PEAK HR FACTOR	0.909			0.931			0.853			0.000			0.971	
APP/DEPART	1,240	/	829	711	/	1,137	512	/	0	0	/	497	0	
PM	5:00 PM	82	152	0	0	256	12	24	0	191	0	0	0	717
	5:15 PM	91	170	0	0	202	12	30	0	177	0	0	0	682
	5:30 PM	88	180	0	0	243	12	24	0	177	0	0	0	724
	5:45 PM	67	178	0	0	232	5	30	0	153	0	0	0	665
	6:00 PM	63	175	0	0	246	22	28	0	159	0	0	0	693
	6:15 PM	82	167	0	0	274	24	22	0	162	0	0	0	731
	6:30 PM	93	165	0	0	238	31	37	0	147	0	0	0	711
	6:45 PM	73	155	0	0	204	15	27	0	135	0	0	0	609
	VOLUMES	639	1,342	0	0	1,895	133	222	0	1,301	0	0	0	5,532
	APPROACH %	32%	68%	0%	0%	93%	7%	15%	0%	85%	0%	0%	0%	
APP/DEPART	1,981	/	1,555	2,028	/	3,196	1,523	/	0	0	/	781	0	
BEGIN PEAK HR	5:30 PM													
VOLUMES	300	700	0	0	995	63	104	0	651	0	0	0	2,813	
APPROACH %	30%	70%	0%	0%	94%	6%	14%	0%	86%	0%	0%	0%		
PEAK HR FACTOR	0.933			0.888			0.939			0.000			0.962	
APP/DEPART	1,000	/	799	1,058	/	1,646	755	/	0	0	/	368	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Oct 19, 17
THURSDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Olympic

PROJECT #: SC1532
LOCATION #: 675
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Olympic			Olympic			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	X	X	X	X	0.5	X	0.5	

AM	7:30 AM	7	266	50	41	148	0	0	0	0	4	0	8	524
	7:45 AM	5	285	56	46	167	0	0	0	0	7	0	8	574
	8:00 AM	14	275	58	70	200	0	0	0	0	11	0	12	640
	8:15 AM	7	301	55	45	208	0	0	0	0	10	0	12	638
	8:30 AM	4	249	60	43	229	0	0	0	0	18	0	9	612
	8:45 AM	7	260	36	26	238	0	0	0	0	7	0	10	584
	9:00 AM	10	258	37	31	227	0	0	0	0	11	0	9	583
	9:15 AM	13	271	49	34	214	0	0	0	0	8	0	12	601
	VOLUMES	67	2,165	401	336	1,631	0	0	0	0	76	0	80	4,756
	APPROACH %	3%	82%	15%	17%	83%	0%	0%	0%	0%	49%	0%	51%	
APP/DEPART	2,633	/	2,246	1,967	/	1,773	0	/	737	156	/	0	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	32	1,085	209	184	875	0	0	0	0	46	0	43	2,474	
APPROACH %	2%	82%	16%	17%	83%	0%	0%	0%	0%	52%	0%	48%		
PEAK HR FACTOR	0.913			0.973			0.000			0.824				
APP/DEPART	1,326	/	1,128	1,059	/	952	0	/	394	89	/	0	0	
PM	5:00 PM	6	177	12	39	364	0	0	0	0	25	0	16	639
	5:15 PM	20	215	19	38	323	0	0	0	0	14	0	13	642
	5:30 PM	13	234	22	33	374	0	0	0	0	12	0	12	700
	5:45 PM	6	215	13	49	347	0	0	0	0	24	0	33	687
	6:00 PM	8	206	23	39	343	0	0	0	0	21	0	25	665
	6:15 PM	9	219	17	54	328	0	0	0	0	16	0	20	663
	6:30 PM	11	229	16	49	357	0	0	0	0	13	0	19	694
	6:45 PM	10	228	26	44	338	0	0	0	0	7	0	13	666
	VOLUMES	83	1,723	148	345	2,774	0	0	0	0	132	0	151	5,356
	APPROACH %	4%	88%	8%	11%	89%	0%	0%	0%	0%	47%	0%	53%	
APP/DEPART	1,954	/	1,888	3,119	/	2,989	0	/	479	283	/	0	0	
BEGIN PEAK HR	5:30 PM													
VOLUMES	36	874	75	175	1,392	0	0	0	0	73	0	90	2,715	
APPROACH %	4%	89%	8%	11%	89%	0%	0%	0%	0%	45%	0%	55%		
PEAK HR FACTOR	0.915			0.963			0.000			0.715				
APP/DEPART	985	/	970	1,567	/	1,501	0	/	244	163	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Oct 26, 17
THURSDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Pico

PROJECT #: SC1532
LOCATION #: 008A
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Pico			Pico			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 1	

AM	7:30 AM	13	296	39	26	91	2	7	24	4	27	15	28	572
	7:45 AM	20	311	59	18	128	4	9	25	4	15	25	47	665
	8:00 AM	6	292	54	19	142	1	8	26	4	21	31	48	652
	8:15 AM	10	308	40	25	167	5	6	24	3	19	34	50	691
	8:30 AM	13	258	36	37	139	5	10	28	3	24	23	40	616
	8:45 AM	20	278	49	29	159	9	10	25	5	34	29	41	688
	9:00 AM	7	254	45	26	113	3	5	17	5	35	25	42	577
	9:15 AM	11	275	46	37	171	8	7	20	5	30	27	47	684
	VOLUMES	100	2,272	368	217	1,110	37	62	189	33	205	209	343	5,145
	APPROACH %	4%	83%	13%	16%	81%	3%	22%	67%	12%	27%	28%	45%	
APP/DEPART	2,740	/	2,676	1,364	/	1,348	284	/	774	757	/	347	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	49	1,136	179	110	607	20	34	103	15	98	117	179	2,647	
APPROACH %	4%	83%	13%	15%	82%	3%	22%	68%	10%	25%	30%	45%		
PEAK HR FACTOR	0.953			0.935			0.927			0.947			0.958	
APP/DEPART	1,364	/	1,349	737	/	720	152	/	392	394	/	186	0	
PM	5:00 PM	17	191	18	28	246	8	11	21	16	61	43	64	724
	5:15 PM	5	177	19	34	288	13	11	19	13	68	44	52	743
	5:30 PM	14	173	33	35	271	7	19	25	15	63	47	45	747
	5:45 PM	12	184	32	42	318	12	11	21	18	66	41	46	803
	6:00 PM	11	194	22	28	286	7	17	19	10	62	47	59	762
	6:15 PM	5	185	24	32	285	10	9	26	9	65	42	61	753
	6:30 PM	15	160	43	35	243	8	15	30	7	65	41	55	717
	6:45 PM	8	208	30	34	276	6	18	26	8	59	27	59	759
	VOLUMES	87	1,472	221	268	2,213	71	111	187	96	509	332	441	6,008
	APPROACH %	5%	83%	12%	11%	87%	3%	28%	47%	24%	40%	26%	34%	
APP/DEPART	1,780	/	2,026	2,552	/	2,818	394	/	674	1,282	/	490	0	
BEGIN PEAK HR	5:30 PM													
VOLUMES	42	736	111	137	1,160	36	56	91	52	256	177	211	3,065	
APPROACH %	5%	83%	12%	10%	87%	3%	28%	46%	26%	40%	27%	33%		
PEAK HR FACTOR	0.975			0.896			0.843			0.958			0.954	
APP/DEPART	889	/	1,005	1,333	/	1,468	199	/	337	644	/	255	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Oct 26, 17
THURSDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Pico

PROJECT #: SC1532
LOCATION #: 008B
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Pico			Pico			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	X	X	1	2	0	1	2	0	1	1	1	

AM	7:30 AM	0	0	0	0	10	0	0	0	0	23	0	0	33
	7:45 AM	1	0	0	0	12	0	0	0	0	14	0	0	27
	8:00 AM	0	0	0	0	16	0	0	0	1	17	0	0	34
	8:15 AM	0	0	0	0	12	0	0	0	0	20	0	0	32
	8:30 AM	1	0	0	0	7	0	0	0	1	21	0	0	30
	8:45 AM	0	0	0	0	23	0	0	0	2	22	0	0	47
	9:00 AM	0	0	0	0	23	0	0	0	0	14	0	0	37
	9:15 AM	0	0	0	0	13	0	0	0	0	12	0	0	25
	VOLUMES	2	0	0	0	116	0	0	0	4	143	0	0	265
	APPROACH %	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%	
APP/DEPART	2	/	0	116	/	265	4	/	0	143	/	0	0	
BEGIN PEAK HR	8:15 AM													
VOLUMES	1	0	0	0	65	0	0	0	3	77	0	0	146	
APPROACH %	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%		
PEAK HR FACTOR	0.250			0.707			0.375			0.875			0.777	
APP/DEPART	1	/	0	65	/	146	3	/	0	77	/	0	0	
PM	5:00 PM	0	0	0	0	32	0	0	0	17	0	0	49	
	5:15 PM	0	0	0	0	33	0	0	5	29	0	0	67	
	5:30 PM	0	0	0	0	25	0	0	5	12	0	0	42	
	5:45 PM	2	0	0	0	25	0	0	5	18	0	0	50	
	6:00 PM	4	0	0	0	20	0	0	5	22	0	0	51	
	6:15 PM	0	0	0	0	21	0	0	3	10	0	0	34	
	6:30 PM	0	0	0	0	16	0	0	5	15	0	0	36	
	6:45 PM	0	0	0	0	17	0	0	2	13	0	0	32	
	VOLUMES	6	0	0	0	189	0	0	0	30	136	0	0	361
	APPROACH %	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%	
APP/DEPART	6	/	0	189	/	361	30	/	0	136	/	0	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	6	0	0	0	103	0	0	0	20	81	0	0	210	
APPROACH %	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%		
PEAK HR FACTOR	0.375			0.780			1.000			0.698			0.784	
APP/DEPART	6	/	0	103	/	210	20	/	0	81	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Wilshire

PROJECT #: SC1532
LOCATION #: 011
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Wilshire			Wilshire			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

AM	7:30 AM	4	6	20	3	14	5	4	65	3	9	52	8	193
	7:45 AM	7	12	22	1	11	9	8	75	3	14	76	9	247
	8:00 AM	2	23	19	8	9	10	7	78	5	14	74	10	259
	8:15 AM	7	11	21	5	7	9	9	74	10	20	64	13	250
	8:30 AM	2	11	16	6	15	11	5	77	13	17	79	7	259
	8:45 AM	7	19	28	2	24	7	10	96	11	19	59	17	299
	9:00 AM	8	20	31	6	15	11	4	56	17	14	63	8	253
	9:15 AM	16	24	46	5	15	10	10	64	13	21	63	14	301
	VOLUMES	53	126	203	36	110	72	57	585	75	128	530	86	2,061
	APPROACH %	14%	33%	53%	17%	50%	33%	8%	82%	10%	17%	71%	12%	
APP/DEPART	382	/	269	218	/	310	717	/	827	744	/	655	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	33	74	121	19	69	39	29	293	54	71	264	46	1,112	
APPROACH %	14%	32%	53%	15%	54%	31%	8%	78%	14%	19%	69%	12%		
PEAK HR FACTOR	0.663			0.962			0.803			0.925			0.924	
APP/DEPART	228	/	149	127	/	194	376	/	433	381	/	336	0	
PM	5:00 PM	14	18	34	8	20	10	3	57	10	26	78	8	286
	5:15 PM	16	18	27	5	19	7	3	55	7	22	104	10	293
	5:30 PM	21	30	45	6	12	15	2	46	11	25	91	9	313
	5:45 PM	14	32	34	6	12	15	5	58	20	28	93	18	335
	6:00 PM	12	24	45	6	18	23	2	57	11	26	107	16	347
	6:15 PM	19	33	41	2	13	19	3	78	15	28	83	17	351
	6:30 PM	18	29	51	6	25	21	5	62	16	33	68	10	344
	6:45 PM	17	25	56	5	13	21	7	49	14	28	77	18	330
	VOLUMES	131	209	333	44	132	131	30	462	104	216	701	106	2,599
	APPROACH %	19%	31%	49%	14%	43%	43%	5%	78%	17%	21%	69%	10%	
APP/DEPART	673	/	345	307	/	449	596	/	844	1,023	/	961	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	63	118	171	20	68	78	15	255	62	115	351	61	1,377	
APPROACH %	18%	34%	49%	12%	41%	47%	5%	77%	19%	22%	67%	12%		
PEAK HR FACTOR	0.898			0.798			0.865			0.884			0.981	
APP/DEPART	352	/	194	166	/	244	332	/	448	527	/	491	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 012
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	

AM	7:30 AM	6	32	6	2	16	5	4	12	8	2	10	19	122
	7:45 AM	8	30	5	2	18	6	14	7	3	1	17	18	129
	8:00 AM	11	34	8	1	16	5	8	14	5	3	14	10	129
	8:15 AM	5	41	17	1	23	5	9	23	7	4	9	24	168
	8:30 AM	7	30	8	4	18	14	21	15	10	6	9	27	169
	8:45 AM	6	51	19	9	30	14	22	20	5	5	7	41	229
	9:00 AM	10	44	15	7	18	15	16	25	9	9	19	27	214
	9:15 AM	6	45	11	6	34	8	14	15	5	3	19	20	186
	VOLUMES	59	307	89	32	173	72	108	131	52	33	104	186	1,346
	APPROACH %	13%	67%	20%	12%	62%	26%	37%	45%	18%	10%	32%	58%	
APP/DEPART	455	/	607	277	/	260	291	/	245	323	/	234	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	29	170	53	26	100	51	73	75	29	23	54	115	798	
APPROACH %	12%	67%	21%	15%	56%	29%	41%	42%	16%	12%	28%	60%		
PEAK HR FACTOR	0.829			0.835			0.885			0.873			0.871	
APP/DEPART	252	/	364	177	/	154	177	/	148	192	/	132	0	
PM	5:00 PM	30	44	32	11	39	12	8	22	12	14	16	12	252
	5:15 PM	17	38	36	6	36	5	8	21	12	11	26	21	237
	5:30 PM	17	54	35	4	31	8	9	23	11	11	19	28	250
	5:45 PM	24	54	30	11	37	10	17	19	15	17	26	27	287
	6:00 PM	15	51	27	6	36	9	13	20	16	11	32	16	252
	6:15 PM	20	55	43	7	36	5	13	20	11	18	24	28	280
	6:30 PM	25	53	28	6	43	14	9	19	16	21	16	19	269
	6:45 PM	29	57	36	6	33	7	9	21	17	11	20	16	262
	VOLUMES	177	406	267	57	291	70	86	165	110	114	179	167	2,089
	APPROACH %	21%	48%	31%	14%	70%	17%	24%	46%	30%	25%	39%	36%	
APP/DEPART	850	/	664	418	/	517	361	/	484	460	/	424	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	84	213	128	30	152	38	52	78	58	67	98	90	1,088	
APPROACH %	20%	50%	30%	14%	69%	17%	28%	41%	31%	26%	38%	35%		
PEAK HR FACTOR	0.900			0.873			0.922			0.911			0.948	
APP/DEPART	425	/	359	220	/	279	188	/	232	255	/	218	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 013
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	0	2	0	0	1	1	

AM	7:30 AM	7	29	14	8	22	4	12	24	4	2	21	12	159
	7:45 AM	4	32	15	5	16	6	13	22	6	4	19	24	166
	8:00 AM	11	35	16	12	18	7	14	28	1	14	31	25	212
	8:15 AM	7	44	23	11	15	5	13	29	4	6	20	33	210
	8:30 AM	6	46	18	7	29	10	10	31	8	9	21	32	227
	8:45 AM	11	57	18	7	14	7	22	27	8	8	21	43	243
	9:00 AM	16	50	29	9	21	2	18	32	7	5	24	35	248
	9:15 AM	11	55	20	13	17	5	14	29	14	8	37	30	253
	VOLUMES	73	348	153	72	152	46	116	222	52	56	194	234	1,718
	APPROACH %	13%	61%	27%	27%	56%	17%	30%	57%	13%	12%	40%	48%	
APP/DEPART	574	/	699	270	/	261	390	/	446	484	/	312	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	44	208	85	36	81	24	64	119	37	30	103	140	971	
APPROACH %	13%	62%	25%	26%	57%	17%	29%	54%	17%	11%	38%	51%		
PEAK HR FACTOR	0.887			0.766			0.965			0.910			0.959	
APP/DEPART	337	/	413	141	/	148	220	/	239	273	/	171	0	
PM	5:00 PM	24	36	32	11	30	9	20	24	13	26	32	38	295
	5:15 PM	13	41	28	8	39	3	11	40	15	21	43	31	293
	5:30 PM	22	49	36	7	37	9	16	31	14	17	33	40	311
	5:45 PM	18	43	37	9	44	7	12	37	13	19	42	60	341
	6:00 PM	23	53	46	16	34	11	17	26	17	16	47	44	350
	6:15 PM	18	46	34	20	31	17	16	32	16	15	41	61	347
	6:30 PM	19	53	42	14	43	17	26	48	21	13	36	47	379
	6:45 PM	15	54	55	18	37	22	19	27	14	15	41	47	364
	VOLUMES	152	375	310	103	295	95	137	265	123	142	315	368	2,680
	APPROACH %	18%	45%	37%	21%	60%	19%	26%	50%	23%	17%	38%	45%	
APP/DEPART	837	/	881	493	/	562	525	/	676	825	/	561	0	
BEGIN PEAK HR	6:00 PM													
VOLUMES	75	206	177	68	145	67	78	133	68	59	165	199	1,440	
APPROACH %	16%	45%	39%	24%	52%	24%	28%	48%	24%	14%	39%	47%		
PEAK HR FACTOR	0.923			0.909			0.734			0.904			0.950	
APP/DEPART	458	/	485	280	/	272	279	/	376	423	/	307	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Broadway

PROJECT #: SC1532
LOCATION #: 014
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Broadway			Broadway			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

	4	37	10	6	24	2	15	18	4	8	12	21	161
7:45 AM	1	41	9	3	18	4	19	18	10	9	15	26	173
8:00 AM	10	31	16	8	21	4	9	37	15	9	16	22	198
8:15 AM	7	53	12	5	21	4	13	25	4	8	19	26	197
8:30 AM	10	56	7	18	21	1	12	25	10	16	21	33	230
8:45 AM	5	74	22	5	22	1	22	22	14	14	37	44	282
9:00 AM	6	65	17	2	25	5	18	28	15	7	21	29	238
9:15 AM	5	57	25	9	26	2	22	20	9	14	24	35	248

AM

VOLUMES	48	414	118	56	178	23	130	193	81	85	165	236	1,727
APPROACH %	8%	71%	20%	22%	69%	9%	32%	48%	20%	17%	34%	49%	
APP/DEPART	580	/	784	257	/	344	404	/	363	486	/	236	0
BEGIN PEAK HR	8:30 AM												
VOLUMES	26	252	71	34	94	9	74	95	48	51	103	141	998
APPROACH %	7%	72%	20%	25%	69%	7%	34%	44%	22%	17%	35%	48%	
PEAK HR FACTOR	0.864			0.856			0.889			0.776			0.885
APP/DEPART	349	/	470	137	/	193	217	/	197	295	/	138	0

PM

5:00 PM	7	45	34	18	47	6	24	33	22	14	30	40	320
5:15 PM	6	49	31	17	54	3	13	40	14	10	35	30	302
5:30 PM	4	44	19	13	49	4	15	31	27	15	37	39	297
5:45 PM	13	46	20	16	47	9	15	38	24	11	38	49	326
6:00 PM	15	49	27	16	31	16	16	33	21	19	34	51	328
6:15 PM	12	51	25	16	36	9	20	28	17	11	40	46	311
6:30 PM	8	53	18	17	53	6	13	41	23	15	32	44	323
6:45 PM	8	52	22	19	45	7	20	33	33	16	41	51	347

VOLUMES	73	389	196	132	362	60	136	277	181	111	287	350	2,554
APPROACH %	11%	59%	30%	24%	65%	11%	23%	47%	30%	15%	38%	47%	
APP/DEPART	658	/	881	554	/	654	594	/	599	748	/	420	0
BEGIN PEAK HR	6:00 PM												
VOLUMES	43	205	92	68	165	38	69	135	94	61	147	192	1,309
APPROACH %	13%	60%	27%	25%	61%	14%	23%	45%	32%	15%	37%	48%	
PEAK HR FACTOR	0.934			0.891			0.866			0.926			0.943
APP/DEPART	340	/	469	271	/	320	298	/	292	400	/	228	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Colorado

PROJECT #: SC1532
LOCATION #: 015
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	X	X	1	1	X	X	X	0.5	1	0.5	

AM	7:30 AM	1	38	0	1	29	4	0	0	0	5	28	17	123
	7:45 AM	5	40	0	0	21	7	0	0	0	5	32	20	130
	8:00 AM	7	45	0	0	29	8	0	0	0	5	32	23	149
	8:15 AM	2	61	0	0	23	8	0	0	0	5	35	31	165
	8:30 AM	4	66	0	0	22	12	0	0	0	4	44	38	190
	8:45 AM	3	73	0	0	28	10	0	0	0	4	45	40	203
	9:00 AM	7	78	0	0	30	8	0	0	0	7	36	31	197
	9:15 AM	5	64	0	0	27	11	0	0	0	3	32	37	179
	VOLUMES	34	465	0	1	209	68	0	0	0	38	284	237	1,336
	APPROACH %	7%	93%	0%	0%	75%	24%	0%	0%	0%	7%	51%	42%	
APP/DEPART	499	/	703	278	/	247	0	/	0	559	/	386	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	19	281	0	0	107	41	0	0	0	18	157	146	769	
APPROACH %	6%	94%	0%	0%	72%	28%	0%	0%	0%	6%	49%	45%		
PEAK HR FACTOR	0.882			0.974			0.000			0.902			0.947	
APP/DEPART	300	/	427	148	/	125	0	/	0	321	/	217	0	
PM	5:00 PM	5	70	0	0	95	10	0	0	0	10	26	21	237
	5:15 PM	6	47	0	0	71	13	0	0	0	21	50	33	241
	5:30 PM	3	47	0	0	86	18	0	0	0	27	46	30	257
	5:45 PM	2	42	0	0	62	18	0	0	0	21	42	27	214
	6:00 PM	4	66	0	0	76	12	0	0	0	21	54	37	270
	6:15 PM	5	50	0	1	70	12	0	0	0	29	31	30	228
	6:30 PM	4	57	0	1	86	16	0	0	0	18	58	32	272
	6:45 PM	4	63	0	0	79	11	0	0	0	20	53	15	245
	VOLUMES	33	442	0	2	625	110	0	0	0	167	360	225	1,964
	APPROACH %	7%	93%	0%	0%	85%	15%	0%	0%	0%	22%	48%	30%	
APP/DEPART	475	/	669	737	/	792	0	/	0	752	/	503	0	
BEGIN PEAK HR	6:00 PM													
VOLUMES	17	236	0	2	311	51	0	0	0	88	196	114	1,015	
APPROACH %	7%	93%	0%	1%	85%	14%	0%	0%	0%	22%	49%	29%		
PEAK HR FACTOR	0.904			0.883			0.000			0.888			0.933	
APP/DEPART	253	/	352	364	/	399	0	/	0	398	/	264	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Oct 19, 17
THURSDAY

LOCATION: Santa Monica
NORTH & SOUTH: Main
EAST & WEST: Olympic

PROJECT #: SC1532
LOCATION #: 659
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Main			Main			Olympic			Olympic			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	1	1	0	1	1	0	

AM	7:30 AM	4	43	79	29	31	2	5	70	13	19	9	6	310
	7:45 AM	1	39	106	16	23	0	1	74	11	24	13	7	315
	8:00 AM	7	39	110	22	20	3	7	106	21	27	14	4	380
	8:15 AM	9	51	97	13	16	2	0	89	15	28	14	5	339
	8:30 AM	5	59	90	17	23	4	10	81	13	28	13	7	350
	8:45 AM	6	76	86	11	12	3	5	50	15	27	10	3	304
	9:00 AM	6	62	94	13	13	0	0	59	8	23	14	9	301
	9:15 AM	5	54	96	19	12	3	12	67	9	19	12	4	312
	VOLUMES	43	423	758	140	150	17	40	596	105	195	99	45	2,611
	APPROACH %	4%	35%	62%	46%	49%	6%	5%	80%	14%	58%	29%	13%	
APP/DEPART	1,224	/	508	307	/	450	741	/	1,494	339	/	159	0	
BEGIN PEAK HR	7:45 AM													
VOLUMES	22	188	403	68	82	9	18	350	60	107	54	23	1,384	
APPROACH %	4%	31%	66%	43%	52%	6%	4%	82%	14%	58%	29%	13%		
PEAK HR FACTOR	0.976			0.883			0.799			0.958			0.911	
APP/DEPART	613	/	229	159	/	249	428	/	821	184	/	85	0	
PM	5:00 PM	12	34	31	28	56	5	6	31	7	20	22	3	255
	5:15 PM	6	46	31	19	62	3	5	36	16	20	22	6	272
	5:30 PM	7	46	28	25	77	1	10	35	17	28	15	3	292
	5:45 PM	13	40	33	18	56	2	13	34	11	26	44	4	294
	6:00 PM	7	60	27	32	62	2	13	34	11	19	36	3	306
	6:15 PM	8	44	35	35	57	5	8	44	17	15	25	8	301
	6:30 PM	3	47	36	24	61	4	4	47	17	14	22	7	286
	6:45 PM	4	31	28	22	46	4	8	52	7	9	14	8	233
	VOLUMES	60	348	249	203	477	26	67	313	103	151	200	42	2,239
	APPROACH %	9%	53%	38%	29%	68%	4%	14%	65%	21%	38%	51%	11%	
APP/DEPART	657	/	458	706	/	731	483	/	764	393	/	286	0	
BEGIN PEAK HR	5:30 PM													
VOLUMES	35	190	123	110	252	10	44	147	56	88	120	18	1,193	
APPROACH %	10%	55%	35%	30%	68%	3%	18%	60%	23%	39%	53%	8%		
PEAK HR FACTOR	0.926			0.903			0.895			0.764			0.975	
APP/DEPART	348	/	253	372	/	396	247	/	379	226	/	165	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Oct 19, 17
THURSDAY

LOCATION: Santa Monica
NORTH & SOUTH: Main
EAST & WEST: Pico

PROJECT #: SC1532
LOCATION #: 017
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Main			Main			Pico			Pico			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	1	1	1	2	0	1	2	0	

AM	7:30 AM	19	116	24	7	8	0	25	52	11	27	100	10	399
	7:45 AM	24	160	34	14	19	3	28	59	7	37	86	14	485
	8:00 AM	9	138	29	15	29	4	36	62	8	42	101	28	501
	8:15 AM	23	127	30	10	21	7	31	56	7	53	86	40	491
	8:30 AM	20	133	42	9	20	6	28	58	10	50	95	36	507
	8:45 AM	22	138	27	20	15	5	33	56	15	54	105	28	518
	9:00 AM	26	131	32	6	14	5	36	65	9	58	78	21	481
	9:15 AM	17	131	37	9	20	5	39	48	11	54	81	16	468
	VOLUMES	160	1,074	255	90	146	35	256	456	78	375	732	193	3,850
	APPROACH %	11%	72%	17%	33%	54%	13%	32%	58%	10%	29%	56%	15%	
APP/DEPART	1,489	/	1,523	271	/	599	790	/	801	1,300	/	927	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	74	536	128	54	85	22	128	232	40	199	387	132	2,017	
APPROACH %	10%	73%	17%	34%	53%	14%	32%	58%	10%	28%	54%	18%		
PEAK HR FACTOR	0.946			0.839			0.943			0.960			0.973	
APP/DEPART	738	/	796	161	/	324	400	/	414	718	/	483	0	
PM	5:00 PM	11	48	34	27	86	11	6	60	14	71	155	12	535
	5:15 PM	8	40	30	33	79	17	8	53	11	73	165	15	532
	5:30 PM	18	52	35	23	106	23	10	59	5	72	139	21	563
	5:45 PM	13	52	38	28	63	18	13	55	11	80	163	17	551
	6:00 PM	12	63	23	24	89	14	15	57	8	76	150	22	553
	6:15 PM	16	55	36	23	59	11	10	57	9	66	143	17	502
	6:30 PM	11	59	26	28	62	16	13	62	9	66	143	18	513
	6:45 PM	17	47	42	21	52	16	12	60	7	70	142	12	498
	VOLUMES	106	416	264	207	596	126	87	463	74	574	1,200	134	4,247
	APPROACH %	13%	53%	34%	22%	64%	14%	14%	74%	12%	30%	63%	7%	
APP/DEPART	786	/	638	929	/	1,244	624	/	933	1,908	/	1,432	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	51	207	126	108	337	72	46	224	35	301	617	75	2,199	
APPROACH %	13%	54%	33%	21%	65%	14%	15%	73%	11%	30%	62%	8%		
PEAK HR FACTOR	0.914			0.850			0.953			0.955			0.976	
APP/DEPART	384	/	329	517	/	673	305	/	457	993	/	740	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Wilshire

PROJECT #: SC1532
LOCATION #: 030
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Wilshire			Wilshire			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

AM	7:30 AM	6	24	10	19	47	1	7	82	6	20	71	25	318
	7:45 AM	9	30	13	15	65	2	4	86	13	27	94	29	387
	8:00 AM	11	40	23	14	48	9	5	99	13	27	104	33	426
	8:15 AM	7	34	18	10	48	3	5	84	12	34	99	26	380
	8:30 AM	14	31	12	13	56	6	11	83	11	27	118	31	413
	8:45 AM	9	22	7	15	53	4	14	90	16	25	96	52	403
	9:00 AM	9	35	15	25	47	1	4	78	16	21	97	42	390
	9:15 AM	7	20	15	20	49	4	6	93	19	25	111	33	402
	VOLUMES	72	236	113	131	413	30	56	695	106	206	790	271	3,119
	APPROACH %	17%	56%	27%	23%	72%	5%	7%	81%	12%	16%	62%	21%	
APP/DEPART	421	/	562	574	/	724	857	/	941	1,267	/	892	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	41	127	60	52	205	22	35	356	52	113	417	142	1,622	
APPROACH %	18%	56%	26%	19%	73%	8%	8%	80%	12%	17%	62%	21%		
PEAK HR FACTOR	0.770			0.930			0.923			0.955			0.952	
APP/DEPART	228	/	303	279	/	369	443	/	469	672	/	481	0	
PM	5:00 PM	6	27	23	24	50	7	7	85	18	33	97	16	393
	5:15 PM	12	34	27	26	41	10	4	89	16	34	125	19	437
	5:30 PM	9	36	21	29	58	16	5	85	19	26	125	28	457
	5:45 PM	10	29	20	19	36	16	3	96	15	36	128	29	437
	6:00 PM	10	29	25	29	39	12	5	97	29	25	134	29	463
	6:15 PM	10	25	29	23	44	18	4	91	23	19	119	23	428
	6:30 PM	3	21	18	15	33	10	4	124	20	28	107	29	412
	6:45 PM	15	35	29	22	36	9	2	95	18	23	117	27	428
	VOLUMES	75	236	192	187	337	98	34	762	158	224	952	200	3,455
	APPROACH %	15%	47%	38%	30%	54%	16%	4%	80%	17%	16%	69%	15%	
APP/DEPART	503	/	469	622	/	720	954	/	1,141	1,376	/	1,125	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	41	128	93	103	174	54	17	367	79	121	512	105	1,794	
APPROACH %	16%	49%	35%	31%	53%	16%	4%	79%	17%	16%	69%	14%		
PEAK HR FACTOR	0.897			0.803			0.884			0.956			0.969	
APP/DEPART	262	/	249	331	/	375	463	/	563	738	/	607	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 031
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W	S	E ▶
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	2	0	0	1	0	0	1	0	

AM	7:30 AM	4	39	7	1	61	5	3	14	3	6	25	7	175
	7:45 AM	3	51	6	3	86	5	3	7	3	9	25	5	206
	8:00 AM	6	57	9	1	90	3	5	24	8	7	20	17	247
	8:15 AM	10	67	8	2	66	7	4	17	11	6	26	12	236
	8:30 AM	8	49	12	3	77	8	0	16	11	9	37	13	243
	8:45 AM	11	41	13	3	66	9	3	24	11	10	49	11	251
	9:00 AM	12	59	13	6	66	9	2	29	11	12	33	17	269
	9:15 AM	3	29	18	2	79	8	4	23	8	7	38	15	234
	VOLUMES	57	392	86	21	591	54	24	154	66	66	253	97	1,861
	APPROACH %	11%	73%	16%	3%	89%	8%	10%	63%	27%	16%	61%	23%	
APP/DEPART	535	/	513	666	/	723	244	/	261	416	/	364	0	
BEGIN PEAK HR	8:15 AM													
VOLUMES	41	216	46	14	275	33	9	86	44	37	145	53	999	
APPROACH %	14%	71%	15%	4%	85%	10%	6%	62%	32%	16%	62%	23%		
PEAK HR FACTOR	0.891			0.915			0.827			0.839				
APP/DEPART	303	/	278	322	/	356	139	/	146	235	/	219	0	
PM	5:00 PM	3	22	11	19	71	17	5	43	24	16	30	16	277
	5:15 PM	7	33	15	12	65	15	9	31	27	14	34	13	275
	5:30 PM	11	44	17	12	77	15	4	43	25	14	38	6	306
	5:45 PM	13	45	8	12	72	7	4	35	21	15	58	7	297
	6:00 PM	4	37	13	10	74	14	4	40	19	8	54	20	297
	6:15 PM	7	42	9	3	58	14	6	46	18	10	40	11	264
	6:30 PM	6	29	14	22	59	9	5	37	17	11	41	8	258
	6:45 PM	5	41	15	5	57	8	8	41	17	18	39	17	271
	VOLUMES	56	293	102	95	533	99	45	316	168	106	334	98	2,245
	APPROACH %	12%	65%	23%	13%	73%	14%	9%	60%	32%	20%	62%	18%	
APP/DEPART	451	/	438	727	/	808	529	/	511	538	/	488	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	35	159	53	46	288	51	21	149	92	51	184	46	1,175	
APPROACH %	14%	64%	21%	12%	75%	13%	8%	57%	35%	18%	65%	16%		
PEAK HR FACTOR	0.858			0.925			0.910			0.857				
APP/DEPART	247	/	227	385	/	431	262	/	247	281	/	270	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 032
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">PM SB queue. EL/WL illegal</p>	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	2	0	X	1	1	X	2	0	

AM	7:30 AM	9	52	13	2	67	1	0	36	17	1	24	2	224
	7:45 AM	11	58	25	9	93	1	0	35	11	1	48	15	307
	8:00 AM	7	78	14	10	92	3	1	46	14	0	46	9	320
	8:15 AM	13	92	17	9	70	0	0	43	21	0	55	11	331
	8:30 AM	13	64	18	11	74	6	0	50	16	1	49	15	317
	8:45 AM	13	67	10	7	69	5	0	43	14	0	51	12	291
	9:00 AM	9	73	22	6	62	4	0	56	18	0	48	12	310
	9:15 AM	15	51	12	5	82	6	0	54	22	1	55	11	314
	VOLUMES	90	535	131	59	609	26	1	363	133	4	376	87	2,414
	APPROACH %	12%	71%	17%	9%	88%	4%	0%	73%	27%	1%	81%	19%	
APP/DEPART	756	/	623	694	/	747	497	/	553	467	/	491	0	
BEGIN PEAK HR	7:45 AM													
VOLUMES	44	292	74	39	329	10	1	174	62	2	198	50	1,275	
APPROACH %	11%	71%	18%	10%	87%	3%	0%	73%	26%	1%	79%	20%		
PEAK HR FACTOR	0.840			0.900			0.898			0.947			0.963	
APP/DEPART	410	/	343	378	/	394	237	/	287	250	/	251	0	
PM	5:00 PM	5	37	13	17	83	9	0	55	26	1	77	22	345
	5:15 PM	9	44	23	16	85	12	0	63	23	2	76	18	371
	5:30 PM	14	59	17	18	86	11	0	56	24	1	72	20	378
	5:45 PM	11	48	21	18	73	10	1	65	30	0	89	13	379
	6:00 PM	12	43	22	13	83	8	1	67	25	1	96	14	385
	6:15 PM	18	42	18	20	78	10	0	60	33	2	74	19	374
	6:30 PM	17	41	16	16	72	2	0	81	35	0	90	22	392
	6:45 PM	14	53	15	18	72	7	0	71	32	0	77	10	369
	VOLUMES	100	367	145	136	632	69	2	518	228	7	651	138	2,993
	APPROACH %	16%	60%	24%	16%	76%	8%	0%	69%	30%	1%	82%	17%	
APP/DEPART	612	/	508	837	/	867	748	/	798	796	/	820	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	58	174	77	67	306	30	2	273	123	3	349	68	1,530	
APPROACH %	19%	56%	25%	17%	76%	7%	1%	69%	31%	1%	83%	16%		
PEAK HR FACTOR	0.966			0.933			0.858			0.938			0.976	
APP/DEPART	309	/	245	403	/	432	398	/	416	420	/	437	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Broadway

PROJECT #: SC1532
LOCATION #: 033
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W	S	E ▶
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	2	0	X	1	1	1	1	1	

AM	7:30 AM	25	73	19	1	65	5	0	26	6	23	26	7	276
	7:45 AM	21	97	23	4	93	6	0	22	8	24	36	8	342
	8:00 AM	21	100	30	5	87	11	0	38	11	44	27	9	383
	8:15 AM	22	119	46	2	78	6	0	38	8	24	34	10	387
	8:30 AM	28	101	28	5	68	9	0	41	9	31	55	8	383
	8:45 AM	42	100	40	2	63	15	0	34	5	15	62	8	386
	9:00 AM	30	89	39	2	72	12	0	30	21	31	49	17	392
	9:15 AM	43	90	37	5	75	9	0	32	10	21	47	10	379
	VOLUMES	232	769	262	26	601	73	0	261	78	213	336	77	2,928
	APPROACH %	18%	61%	21%	4%	86%	10%	0%	77%	23%	34%	54%	12%	
APP/DEPART	1,263	/	846	700	/	892	339	/	549	626	/	641	0	
BEGIN PEAK HR	8:15 AM													
VOLUMES	122	409	153	11	281	42	0	143	43	101	200	43	1,548	
APPROACH %	18%	60%	22%	3%	84%	13%	0%	77%	23%	29%	58%	13%		
PEAK HR FACTOR	0.914			0.971			0.912			0.887			0.987	
APP/DEPART	684	/	452	334	/	425	186	/	307	344	/	364	0	
PM	5:00 PM	20	43	20	14	94	10	0	50	29	41	61	12	394
	5:15 PM	35	68	19	17	110	23	0	55	37	46	73	16	499
	5:30 PM	36	72	21	17	112	25	0	46	17	45	71	20	482
	5:45 PM	38	68	20	15	95	14	0	51	30	40	80	22	473
	6:00 PM	36	69	29	25	97	16	0	45	31	38	88	20	494
	6:15 PM	47	70	18	22	107	18	0	51	20	38	70	19	480
	6:30 PM	28	68	22	18	81	19	0	48	29	36	94	18	461
	6:45 PM	29	80	26	12	95	18	0	58	26	36	95	23	498
	VOLUMES	269	538	175	140	791	143	0	404	219	320	632	150	3,781
	APPROACH %	27%	55%	18%	13%	74%	13%	0%	65%	35%	29%	57%	14%	
APP/DEPART	982	/	688	1,074	/	1,329	623	/	720	1,102	/	1,044	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	145	277	89	74	414	78	0	197	115	169	312	78	1,948	
APPROACH %	28%	54%	17%	13%	73%	14%	0%	63%	37%	30%	56%	14%		
PEAK HR FACTOR	0.953			0.919			0.848			0.957			0.976	
APP/DEPART	511	/	355	566	/	698	312	/	360	559	/	535	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Colorado

PROJECT #: SC1532
LOCATION #: 034
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	X	X	2	0	X	X	X	0.5	1	0.5	

AM	7:30 AM	41	110	0	0	88	3	0	0	0	9	10	4	265
	7:45 AM	43	154	0	0	116	6	0	0	0	26	14	2	361
	8:00 AM	38	146	0	0	133	6	0	0	0	17	15	2	357
	8:15 AM	64	198	0	0	108	7	0	0	0	22	9	7	415
	8:30 AM	64	158	0	0	93	4	0	0	0	15	21	6	361
	8:45 AM	84	197	0	0	83	6	0	0	0	22	14	6	412
	9:00 AM	49	154	0	0	100	13	0	0	0	12	22	12	362
	9:15 AM	64	172	0	0	110	7	0	0	0	13	16	4	386
	VOLUMES	447	1,289	0	0	831	52	0	0	0	136	121	43	2,919
	APPROACH %	26%	74%	0%	0%	94%	6%	0%	0%	0%	45%	40%	14%	
APP/DEPART	1,736	/	1,332	883	/	968	0	/	0	300	/	619	0	
BEGIN PEAK HR	8:15 AM													
VOLUMES	261	707	0	0	384	30	0	0	0	71	66	31	1,550	
APPROACH %	27%	73%	0%	0%	93%	7%	0%	0%	0%	42%	39%	18%		
PEAK HR FACTOR	0.861			0.900			0.000			0.913			0.934	
APP/DEPART	968	/	738	414	/	455	0	/	0	168	/	357	0	
PM	5:00 PM	19	84	0	0	188	18	0	0	0	36	24	5	374
	5:15 PM	51	112	0	0	191	26	0	0	0	35	35	9	459
	5:30 PM	37	123	0	0	191	21	0	0	0	32	32	5	441
	5:45 PM	42	128	0	0	180	22	0	0	0	40	37	3	452
	6:00 PM	54	142	0	0	156	30	0	0	0	42	21	10	455
	6:15 PM	43	114	0	0	167	19	0	0	0	33	35	6	417
	6:30 PM	46	116	0	0	147	26	0	0	0	11	27	5	378
	6:45 PM	49	132	0	0	152	15	0	0	0	28	28	9	413
	VOLUMES	341	951	0	0	1,372	177	0	0	0	257	239	52	3,389
	APPROACH %	26%	74%	0%	0%	89%	11%	0%	0%	0%	47%	44%	9%	
APP/DEPART	1,292	/	1,003	1,549	/	1,630	0	/	0	548	/	756	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	184	505	0	0	718	99	0	0	0	149	125	27	1,807	
APPROACH %	27%	73%	0%	0%	88%	12%	0%	0%	0%	50%	42%	9%		
PEAK HR FACTOR	0.879			0.941			0.000			0.941			0.984	
APP/DEPART	689	/	532	817	/	868	0	/	0	301	/	407	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: I-10 WB OFF-Ramp

PROJECT #: SC1532
LOCATION #: 035
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			I-10 WB OFF-Ramp			I-10 WB OFF-Ramp			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	X	X	2	X	X	X	X	2	X	1	

AM	7:30 AM	0	64	0	0	91	0	0	0	0	169	0	94	418
	7:45 AM	0	92	0	0	120	0	0	0	0	189	0	106	507
	8:00 AM	0	95	0	0	161	0	0	0	0	236	0	106	598
	8:15 AM	0	116	0	0	152	0	0	0	0	210	0	132	610
	8:30 AM	0	97	0	0	101	0	0	0	0	190	0	141	529
	8:45 AM	0	112	0	0	122	0	0	0	0	205	0	152	591
	9:00 AM	0	103	0	0	107	0	0	0	0	186	0	113	509
	9:15 AM	0	87	0	0	129	0	0	0	0	170	0	134	520
	VOLUMES	0	766	0	0	983	0	0	0	0	1,555	0	978	4,282
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	61%	0%	39%	
APP/DEPART	766	/	1,744	983	/	2,538	0	/	0	2,533	/	0	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	420	0	0	536	0	0	0	0	841	0	531	2,328	
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	61%	0%	39%		
PEAK HR FACTOR	0.905			0.832			0.000			0.961			0.954	
APP/DEPART	420	/	951	536	/	1,377	0	/	0	1,372	/	0	0	
PM	5:00 PM	0	61	0	0	195	0	0	0	0	121	0	44	421
	5:15 PM	0	81	0	0	226	0	0	0	0	203	0	95	605
	5:30 PM	0	69	0	0	222	0	0	0	0	227	0	93	611
	5:45 PM	0	76	0	0	220	0	0	0	0	205	0	93	594
	6:00 PM	0	74	0	0	214	0	0	0	0	217	0	125	630
	6:15 PM	0	57	0	0	188	0	0	0	0	216	0	94	555
	6:30 PM	0	60	0	0	169	0	0	0	0	232	0	109	570
	6:45 PM	0	76	0	0	186	0	0	0	0	228	0	100	590
	VOLUMES	0	554	0	0	1,620	0	0	0	0	1,649	0	753	4,576
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	69%	0%	31%	
APP/DEPART	554	/	1,307	1,620	/	3,269	0	/	0	2,402	/	0	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	0	300	0	0	882	0	0	0	0	852	0	406	2,440	
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	68%	0%	32%		
PEAK HR FACTOR	0.926			0.976			0.000			0.920			0.968	
APP/DEPART	300	/	706	882	/	1,734	0	/	0	1,258	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: I-10 EB ON-Ramp

PROJECT #: SC1532
LOCATION #: 036
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			I-10 EB ON-Ramp			I-10 EB ON-Ramp			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	2	2	0	0.5	2	0.5	X	X	X	

AM	7:30 AM	6	53	99	58	162	29	10	152	12	0	0	0	581
	7:45 AM	6	85	88	63	167	38	8	141	9	0	0	0	605
	8:00 AM	4	82	94	70	194	56	12	149	18	0	0	0	679
	8:15 AM	7	103	122	74	223	50	14	178	16	0	0	0	787
	8:30 AM	8	85	106	53	183	46	10	101	19	0	0	0	611
	8:45 AM	5	104	109	47	218	55	9	105	14	0	0	0	666
	9:00 AM	7	95	113	74	174	34	8	149	6	0	0	0	660
	9:15 AM	2	79	114	72	173	53	7	166	5	0	0	0	671
	VOLUMES	45	686	845	511	1,494	361	78	1,141	99	0	0	0	5,260
	APPROACH %	3%	44%	54%	22%	63%	15%	6%	87%	8%	0%	0%	0%	
APP/DEPART	1,576	/	764	2,366	/	1,594	1,318	/	2,497	0	/	405	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	24	374	431	244	818	207	45	533	67	0	0	0	2,743	
APPROACH %	3%	45%	52%	19%	64%	16%	7%	83%	10%	0%	0%	0%		
PEAK HR FACTOR	0.893			0.914			0.775			0.000			0.871	
APP/DEPART	829	/	419	1,269	/	886	645	/	1,208	0	/	230	0	
PM	5:00 PM	6	50	46	85	196	23	11	102	18	0	0	0	537
	5:15 PM	4	77	62	83	297	40	4	86	15	0	0	0	668
	5:30 PM	3	60	38	79	322	29	8	94	21	0	0	0	654
	5:45 PM	6	67	37	71	302	40	9	66	4	0	0	0	602
	6:00 PM	1	67	53	74	297	45	8	111	20	0	0	0	676
	6:15 PM	5	48	63	61	285	42	8	87	9	0	0	0	608
	6:30 PM	4	44	50	67	281	35	15	96	15	0	0	0	607
	6:45 PM	6	70	72	66	297	35	8	98	7	0	0	0	659
	VOLUMES	35	483	421	586	2,277	289	71	740	109	0	0	0	5,011
	APPROACH %	4%	51%	45%	19%	72%	9%	8%	80%	12%	0%	0%	0%	
APP/DEPART	939	/	554	3,152	/	2,386	920	/	1,747	0	/	324	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	14	271	190	307	1,218	154	29	357	60	0	0	0	2,600	
APPROACH %	3%	57%	40%	18%	73%	9%	7%	80%	13%	0%	0%	0%		
PEAK HR FACTOR	0.830			0.976			0.802			0.000			0.962	
APP/DEPART	475	/	300	1,679	/	1,278	446	/	854	0	/	168	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Nov 7, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 5th
EAST & WEST: Wilshire

PROJECT #: SC1532
LOCATION #: 038
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Wilshire			Wilshire			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	
	1	1	1	1	1	0	1	2	0	1	2	0	

AM	7:30 AM	19	28	13	7	14	6	2	109	6	15	90	7	316
	7:45 AM	22	39	11	16	22	2	5	96	5	10	134	13	375
	8:00 AM	28	23	15	9	13	4	4	130	4	7	129	9	375
	8:15 AM	30	38	16	14	9	0	2	104	5	18	140	10	386
	8:30 AM	29	33	21	13	21	4	3	103	2	15	145	11	400
	8:45 AM	31	28	29	18	22	3	8	105	5	15	133	5	402
	9:00 AM	41	20	27	10	15	1	5	117	5	14	133	10	398
	9:15 AM	29	27	25	10	19	2	2	111	7	15	139	6	392
	VOLUMES	229	236	157	97	135	22	31	875	39	109	1,043	71	3,044
	APPROACH %	37%	38%	25%	38%	53%	9%	3%	93%	4%	9%	85%	6%	
APP/DEPART	622	/	339	254	/	279	945	/	1,132	1,223	/	1,294	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	130	108	102	51	77	10	18	436	19	59	550	32	1,592	
APPROACH %	38%	32%	30%	37%	56%	7%	4%	92%	4%	9%	86%	5%		
PEAK HR FACTOR	0.966			0.802			0.931			0.937			0.990	
APP/DEPART	340	/	159	138	/	154	473	/	589	641	/	690	0	
PM	5:00 PM	19	43	27	6	13	4	3	148	11	20	144	15	453
	5:15 PM	24	41	38	14	19	6	7	141	9	22	130	18	469
	5:30 PM	13	63	28	8	24	4	6	137	17	12	166	22	500
	5:45 PM	23	73	24	9	12	11	2	111	7	14	138	34	458
	6:00 PM	26	73	40	5	15	7	6	124	13	13	158	29	509
	6:15 PM	20	50	27	13	9	5	12	126	7	17	174	25	485
	6:30 PM	11	53	18	10	6	4	3	149	12	10	138	21	435
	6:45 PM	16	49	22	14	9	5	6	100	7	14	141	24	407
	VOLUMES	152	445	224	79	107	46	45	1,036	83	122	1,189	188	3,716
	APPROACH %	19%	54%	27%	34%	46%	20%	4%	89%	7%	8%	79%	13%	
APP/DEPART	821	/	676	232	/	305	1,164	/	1,346	1,499	/	1,389	0	
BEGIN PEAK HR	5:30 PM													
VOLUMES	82	259	119	35	60	27	26	498	44	56	636	110	1,952	
APPROACH %	18%	56%	26%	29%	49%	22%	5%	88%	8%	7%	79%	14%		
PEAK HR FACTOR	0.827			0.847			0.888			0.928			0.959	
APP/DEPART	460	/	394	122	/	156	568	/	656	802	/	746	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 5th
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 039
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	0	0	1	0	0	1	0	

AM	7:30 AM	17	59	5	2	17	6	0	18	3	1	18	2	148
	7:45 AM	14	61	8	3	28	5	1	18	0	0	25	4	167
	8:00 AM	20	64	13	2	19	5	1	29	3	2	18	0	176
	8:15 AM	20	85	15	3	20	6	2	21	2	2	30	3	209
	8:30 AM	22	74	18	2	26	6	2	28	4	3	34	9	228
	8:45 AM	24	64	11	6	28	8	2	36	4	3	37	23	246
	9:00 AM	21	69	7	5	21	8	2	44	4	7	46	17	251
	9:15 AM	23	65	10	6	24	4	3	31	2	8	36	14	226
	VOLUMES	161	541	87	29	183	48	13	225	22	26	244	72	1,651
	APPROACH %	20%	69%	11%	11%	70%	18%	5%	87%	8%	8%	71%	21%	
APP/DEPART	789	/	626	260	/	231	260	/	341	342	/	453	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	90	272	46	19	99	26	9	139	14	21	153	63	951	
APPROACH %	22%	67%	11%	13%	69%	18%	6%	86%	9%	9%	65%	27%		
PEAK HR FACTOR	0.895			0.857			0.810			0.846			0.947	
APP/DEPART	408	/	344	144	/	134	162	/	204	237	/	269	0	
PM	5:00 PM	7	55	9	3	20	10	7	56	7	6	38	2	220
	5:15 PM	19	87	11	2	21	9	4	53	7	2	36	9	260
	5:30 PM	22	95	10	0	20	4	5	60	5	3	40	11	275
	5:45 PM	20	87	8	1	20	11	6	46	4	9	42	4	258
	6:00 PM	16	91	5	5	11	9	5	61	5	5	54	4	271
	6:15 PM	27	75	5	2	26	3	4	55	5	6	32	6	246
	6:30 PM	28	88	9	2	20	7	4	52	9	5	28	6	258
	6:45 PM	27	89	9	2	14	5	4	52	6	3	43	11	265
	VOLUMES	166	667	66	17	152	58	39	435	48	39	313	53	2,053
	APPROACH %	18%	74%	7%	7%	67%	26%	7%	83%	9%	10%	77%	13%	
APP/DEPART	899	/	759	227	/	238	522	/	519	405	/	537	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	77	360	34	8	72	33	20	220	21	19	172	28	1,064	
APPROACH %	16%	76%	7%	7%	64%	29%	8%	84%	8%	9%	79%	13%		
PEAK HR FACTOR	0.927			0.883			0.919			0.869			0.967	
APP/DEPART	471	/	408	113	/	111	261	/	263	219	/	282	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 5th
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 040
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	0	1	2	0	1	1	1	

AM	7:30 AM	6	79	12	6	17	0	1	46	2	6	21	5	201
	7:45 AM	16	88	6	6	14	3	6	58	2	4	47	12	262
	8:00 AM	16	93	6	4	18	2	5	62	2	10	46	11	275
	8:15 AM	15	128	20	5	15	4	8	62	3	5	51	11	327
	8:30 AM	14	111	30	7	19	5	5	63	4	5	50	16	329
	8:45 AM	23	123	17	5	21	1	6	57	3	5	46	8	315
	9:00 AM	17	103	22	6	13	4	7	67	6	7	45	16	313
	9:15 AM	14	97	17	11	16	7	4	64	5	9	59	15	318
	VOLUMES	121	822	130	50	133	26	42	479	27	51	365	94	2,340
	APPROACH %	11%	77%	12%	24%	64%	12%	8%	87%	5%	10%	72%	18%	
APP/DEPART	1,073	/	957	209	/	211	548	/	661	510	/	511	0	
BEGIN PEAK HR	8:15 AM													
VOLUMES	69	465	89	23	68	14	26	249	16	22	192	51	1,284	
APPROACH %	11%	75%	14%	22%	65%	13%	9%	86%	5%	8%	72%	19%		
PEAK HR FACTOR	0.956			0.847			0.909			0.933				
APP/DEPART	623	/	541	105	/	108	291	/	361	265	/	274	0	
PM	5:00 PM	11	48	22	22	33	8	4	72	5	13	81	6	325
	5:15 PM	32	95	19	12	30	5	8	86	7	9	64	13	380
	5:30 PM	23	99	19	12	32	6	8	70	5	13	61	11	359
	5:45 PM	28	87	23	9	28	1	9	86	5	10	70	9	365
	6:00 PM	34	99	22	17	18	6	6	82	11	9	79	6	389
	6:15 PM	25	86	23	19	24	8	7	92	8	11	74	10	387
	6:30 PM	36	101	21	15	28	3	8	92	7	11	83	8	413
	6:45 PM	27	100	25	7	23	8	8	91	4	14	61	15	383
	VOLUMES	216	715	174	113	216	45	58	671	52	90	573	78	3,001
	APPROACH %	20%	65%	16%	30%	58%	12%	7%	86%	7%	12%	77%	11%	
APP/DEPART	1,105	/	851	374	/	357	781	/	959	741	/	834	0	
BEGIN PEAK HR	6:00 PM													
VOLUMES	122	386	91	58	93	25	29	357	30	45	297	39	1,572	
APPROACH %	20%	64%	15%	33%	53%	14%	7%	86%	7%	12%	78%	10%		
PEAK HR FACTOR	0.948			0.863			0.972			0.934				
APP/DEPART	599	/	454	176	/	168	416	/	506	381	/	444	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Oct 24, 17 TUESDAY	LOCATION: NORTH & SOUTH: 5th EAST & WEST: Broadway	Santa Monica 5th Broadway	PROJECT #: SC1532 LOCATION #: 041 CONTROL: SIGNAL															
NOTES: <div style="text-align: center; color: blue; font-weight: bold;">PM EB queue</div>			<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 2px;">AM</td> <td style="padding: 2px;">▲</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;">PM</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">W</td> </tr> <tr> <td style="padding: 2px;">MD</td> <td style="padding: 2px;">▶</td> <td style="padding: 2px;">E</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td style="padding: 2px;">▼</td> <td style="padding: 2px;">S</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td></td> <td></td> </tr> </table>	AM	▲	N	PM	◀	W	MD	▶	E	OTHER	▼	S	OTHER		
AM	▲	N																
PM	◀	W																
MD	▶	E																
OTHER	▼	S																
OTHER																		

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	0	1	1	0	1	1	0	

AM	7:30 AM	13	89	3	5	8	9	7	36	7	1	32	2	212
	7:45 AM	12	98	10	3	11	6	8	40	1	5	47	3	244
	8:00 AM	23	99	13	5	7	16	11	64	6	4	39	8	295
	8:15 AM	10	133	13	2	6	6	19	63	8	2	46	10	318
	8:30 AM	17	144	9	4	10	12	20	52	3	1	61	5	338
	8:45 AM	21	155	18	6	8	10	11	59	6	7	65	8	374
	9:00 AM	13	114	14	7	4	14	21	44	6	3	53	10	303
	9:15 AM	18	118	19	8	11	11	14	59	7	7	54	9	335
	VOLUMES	127	950	99	40	65	84	111	417	44	30	397	55	2,419
	APPROACH %	11%	81%	8%	21%	34%	44%	19%	73%	8%	6%	82%	11%	
APP/DEPART	1,176	/	1,116	189	/	139	572	/	556	482	/	608	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	69	531	60	25	33	47	66	214	22	18	233	32	1,350	
APPROACH %	10%	80%	9%	24%	31%	45%	22%	71%	7%	6%	82%	11%		
PEAK HR FACTOR	0.851			0.875			0.944			0.884				
APP/DEPART	660	/	629	105	/	73	302	/	299	283	/	349	0	
PM	5:00 PM	16	45	9	6	19	20	25	73	5	6	79	11	314
	5:15 PM	28	115	18	7	16	26	19	65	8	4	69	10	385
	5:30 PM	33	114	21	7	17	26	22	56	8	7	74	4	389
	5:45 PM	42	115	11	5	15	22	18	70	3	1	84	10	396
	6:00 PM	32	120	21	4	13	20	27	72	6	7	92	10	424
	6:15 PM	22	99	15	9	14	18	24	55	5	6	78	10	355
	6:30 PM	36	115	19	12	11	20	21	54	11	4	86	13	402
	6:45 PM	35	117	25	7	13	22	28	58	12	1	87	10	415
	VOLUMES	244	840	139	57	118	174	184	503	58	36	649	78	3,080
	APPROACH %	20%	69%	11%	16%	34%	50%	25%	68%	8%	5%	85%	10%	
APP/DEPART	1,223	/	1,102	349	/	210	745	/	701	763	/	1,067	0	
BEGIN PEAK HR	6:00 PM													
VOLUMES	125	451	80	32	51	80	100	239	34	18	343	43	1,596	
APPROACH %	19%	69%	12%	20%	31%	49%	27%	64%	9%	4%	85%	11%		
PEAK HR FACTOR	0.927			0.970			0.888			0.927			0.943	
APP/DEPART	656	/	594	163	/	103	373	/	351	404	/	548	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 5th
EAST & WEST: Colorado

PROJECT #: SC1532
LOCATION #: 042
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">PM SB queue. NL illegal</p>	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	1	1	1	0	X	X	X	X	1	0	

AM	7:30 AM	0	107	2	5	4	8	0	0	0	0	18	3	147
	7:45 AM	1	117	6	3	6	10	0	0	0	0	32	3	178
	8:00 AM	0	143	6	3	3	10	0	0	0	0	24	3	192
	8:15 AM	0	138	6	1	6	10	0	0	0	0	28	8	197
	8:30 AM	0	172	9	5	1	10	0	0	0	0	41	1	239
	8:45 AM	0	179	6	4	7	12	0	0	0	0	29	7	244
	9:00 AM	0	134	5	11	7	3	0	0	0	0	23	3	186
	9:15 AM	0	151	0	2	9	7	0	0	0	0	26	7	202
	VOLUMES	1	1,141	40	34	43	70	0	0	0	0	221	35	1,585
	APPROACH %	0%	97%	3%	23%	29%	48%	0%	0%	0%	0%	86%	14%	
APP/DEPART	1,182	/	1,176	147	/	43	0	/	74	256	/	292	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	632	27	13	17	42	0	0	0	0	122	19	872	
APPROACH %	0%	96%	4%	18%	24%	58%	0%	0%	0%	0%	87%	13%		
PEAK HR FACTOR	0.891			0.783			0.000			0.839			0.893	
APP/DEPART	659	/	651	72	/	17	0	/	40	141	/	164	0	
PM	5:00 PM	3	54	16	11	3	21	0	0	0	1	52	10	171
	5:15 PM	0	163	11	3	6	22	0	0	0	0	46	9	260
	5:30 PM	0	140	7	5	5	20	0	0	0	0	56	15	248
	5:45 PM	0	156	5	1	4	17	0	0	0	0	63	15	261
	6:00 PM	3	158	11	4	4	20	0	0	0	0	42	17	259
	6:15 PM	4	127	6	8	2	14	0	0	0	0	48	11	220
	6:30 PM	2	158	10	7	4	11	0	0	0	0	45	8	245
	6:45 PM	0	160	16	16	5	12	0	0	0	0	46	10	265
	VOLUMES	12	1,116	82	55	33	137	0	0	0	1	398	95	1,929
	APPROACH %	1%	92%	7%	24%	15%	61%	0%	0%	0%	0%	81%	19%	
APP/DEPART	1,210	/	1,211	225	/	33	0	/	138	494	/	547	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	3	617	34	13	19	79	0	0	0	0	207	56	1,028	
APPROACH %	0%	94%	5%	12%	17%	71%	0%	0%	0%	0%	79%	21%		
PEAK HR FACTOR	0.940			0.895			0.000			0.843			0.985	
APP/DEPART	654	/	673	111	/	19	0	/	47	263	/	289	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Nov 7, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 6th
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 044
CONTROL: SIGNAL

NOTES:	AM		▲ N	
	PM			
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	6th			6th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	0	0	1	0	0	1	0	0	1	0	

AM	7:30 AM	0	17	3	1	17	3	4	21	5	4	23	5	103
	7:45 AM	2	13	4	4	29	1	3	23	2	5	27	7	120
	8:00 AM	5	15	7	4	28	2	9	38	7	5	35	7	162
	8:15 AM	2	21	7	5	26	2	4	35	5	5	32	5	149
	8:30 AM	2	22	7	4	25	5	10	36	8	5	35	7	166
	8:45 AM	0	23	0	4	30	3	9	41	6	8	45	6	175
	9:00 AM	3	17	1	3	34	3	8	46	8	4	39	9	175
	9:15 AM	5	15	7	4	18	2	6	35	6	6	41	8	153
	VOLUMES	19	143	36	29	207	21	53	275	47	42	277	54	1,203
	APPROACH %	10%	72%	18%	11%	81%	8%	14%	73%	13%	11%	74%	14%	
APP/DEPART	198	/	248	257	/	298	375	/	340	373	/	317	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	10	77	15	15	107	13	33	158	28	23	160	30	669	
APPROACH %	10%	75%	15%	11%	79%	10%	15%	72%	13%	11%	75%	14%		
PEAK HR FACTOR	0.823			0.844			0.883			0.903			0.956	
APP/DEPART	102	/	140	135	/	159	219	/	188	213	/	182	0	
PM	5:00 PM	3	35	10	8	31	7	7	75	6	3	46	5	236
	5:15 PM	5	33	11	8	33	5	6	55	8	10	44	7	225
	5:30 PM	4	28	7	10	43	4	8	66	12	8	30	8	228
	5:45 PM	3	43	8	10	26	5	11	57	7	9	31	6	216
	6:00 PM	5	39	9	4	28	7	6	44	7	6	53	5	213
	6:15 PM	5	36	7	9	20	3	6	62	6	6	54	11	225
	6:30 PM	4	39	5	5	24	5	4	45	5	8	37	5	186
	6:45 PM	7	26	8	6	24	5	9	42	7	5	47	4	190
	VOLUMES	36	279	65	60	229	41	57	446	58	55	342	51	1,719
	APPROACH %	9%	73%	17%	18%	69%	12%	10%	80%	10%	12%	76%	11%	
APP/DEPART	380	/	387	330	/	343	561	/	570	448	/	419	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	15	139	36	36	133	21	32	253	33	30	151	26	905	
APPROACH %	8%	73%	19%	19%	70%	11%	10%	80%	10%	14%	73%	13%		
PEAK HR FACTOR	0.880			0.833			0.903			0.848			0.959	
APP/DEPART	190	/	197	190	/	196	318	/	324	207	/	188	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 6th
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 045
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	6th			6th			Santa Monica			Santa Monica			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

AM	7:30 AM	2	7	6	6	9	3	7	57	3	3	30	5	138
	7:45 AM	2	12	4	11	10	7	10	69	2	6	58	8	199
	8:00 AM	2	18	13	15	6	3	4	77	1	6	59	7	211
	8:15 AM	3	16	6	12	11	6	6	75	4	5	57	8	209
	8:30 AM	4	17	5	12	21	7	10	94	11	6	63	16	266
	8:45 AM	0	22	5	16	14	2	4	74	4	10	61	13	225
	9:00 AM	3	15	7	14	16	7	8	86	3	15	62	11	247
	9:15 AM	6	12	8	11	15	7	6	88	3	8	75	12	251
	VOLUMES	22	119	54	97	102	42	55	620	31	59	465	80	1,746
	APPROACH %	11%	61%	28%	40%	42%	17%	8%	88%	4%	10%	77%	13%	
APP/DEPART	195	/	252	241	/	190	706	/	773	604	/	531	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	13	66	25	53	66	23	28	342	21	39	261	52	989	
APPROACH %	13%	63%	24%	37%	46%	16%	7%	87%	5%	11%	74%	15%		
PEAK HR FACTOR	0.963			0.888			0.850			0.926			0.930	
APP/DEPART	104	/	145	142	/	124	391	/	422	352	/	298	0	
PM	5:00 PM	6	22	11	13	29	4	7	109	7	18	90	14	330
	5:15 PM	1	20	14	26	23	5	6	101	4	7	82	16	305
	5:30 PM	3	29	4	14	27	9	6	98	3	8	81	19	301
	5:45 PM	0	21	10	16	21	11	11	97	7	16	89	16	315
	6:00 PM	5	28	7	27	31	7	7	108	8	13	79	14	334
	6:15 PM	2	22	12	17	20	6	7	116	7	15	90	14	328
	6:30 PM	3	16	9	20	22	7	7	120	8	13	87	7	319
	6:45 PM	4	20	10	13	16	7	6	114	6	12	93	9	310
	VOLUMES	24	178	77	146	189	56	57	863	50	102	691	109	2,542
	APPROACH %	9%	64%	28%	37%	48%	14%	6%	89%	5%	11%	77%	12%	
APP/DEPART	279	/	344	391	/	341	970	/	1,086	902	/	771	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	10	87	38	80	94	31	32	441	30	57	345	51	1,296	
APPROACH %	7%	64%	28%	39%	46%	15%	6%	88%	6%	13%	76%	11%		
PEAK HR FACTOR	0.844			0.788			0.931			0.936			0.970	
APP/DEPART	135	/	170	205	/	181	503	/	559	453	/	386	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 7th
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 051
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	7th			7th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	

AM	7:30 AM	3	27	3	5	31	6	2	16	4	2	13	19	131
	7:45 AM	4	31	2	6	30	8	4	27	4	1	30	11	158
	8:00 AM	1	32	6	8	38	6	6	26	2	1	18	2	146
	8:15 AM	8	35	7	12	35	4	3	25	5	2	38	10	184
	8:30 AM	6	42	4	3	30	6	5	38	5	4	45	6	194
	8:45 AM	7	35	5	10	34	8	21	39	11	9	46	13	238
	9:00 AM	5	38	8	12	42	6	23	49	12	10	53	13	271
	9:15 AM	4	43	11	6	28	4	17	33	10	5	39	4	204
	VOLUMES	38	283	46	62	268	48	81	253	53	34	282	78	1,526
	APPROACH %	10%	77%	13%	16%	71%	13%	21%	65%	14%	9%	72%	20%	
	APP/DEPART	367	/	443	378	/	353	387	/	362	394	/	368	0
	BEGIN PEAK HR	8:30 AM												
	VOLUMES	22	158	28	31	134	24	66	159	38	28	183	36	907
APPROACH %	11%	76%	13%	16%	71%	13%	25%	60%	14%	11%	74%	15%		
PEAK HR FACTOR	0.897			0.788			0.783			0.813			0.837	
APP/DEPART	208	/	260	189	/	198	263	/	220	247	/	229	0	
PM	5:00 PM	4	48	7	6	44	4	3	79	11	6	49	7	268
	5:15 PM	6	58	5	16	36	8	2	63	7	6	44	4	255
	5:30 PM	9	46	8	8	38	6	5	76	4	9	48	14	271
	5:45 PM	6	50	9	5	27	5	2	52	7	5	35	6	209
	6:00 PM	6	44	6	11	40	7	9	75	13	6	55	10	282
	6:15 PM	7	48	9	10	42	5	3	57	6	5	32	9	233
	6:30 PM	7	43	7	5	30	2	8	61	3	4	35	6	211
	6:45 PM	8	56	7	6	32	7	5	55	7	4	43	22	252
	VOLUMES	53	393	58	67	289	44	37	518	58	45	341	78	1,981
	APPROACH %	11%	78%	12%	17%	72%	11%	6%	85%	9%	10%	73%	17%	
	APP/DEPART	504	/	508	400	/	391	613	/	645	464	/	437	0
	BEGIN PEAK HR	5:15 PM												
	VOLUMES	27	198	28	40	141	26	18	266	31	26	182	34	1,017
APPROACH %	11%	78%	11%	19%	68%	13%	6%	84%	10%	11%	75%	14%		
PEAK HR FACTOR	0.917			0.863			0.812			0.852			0.902	
APP/DEPART	253	/	250	207	/	197	315	/	335	242	/	235	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: 7th
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 052
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	7th			7th			Santa Monica			Santa Monica			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	
	1	1	0	1	1	0	1	2	0	1	1	1	

AM	7:30 AM	0	28	2	6	17	4	4	59	5	5	35	15	180
	7:45 AM	4	33	5	10	23	3	7	60	7	2	63	11	228
	8:00 AM	2	30	7	8	34	0	13	78	6	5	69	15	267
	8:15 AM	3	40	6	5	21	3	6	79	4	10	67	15	259
	8:30 AM	1	64	10	10	19	5	15	92	10	5	79	25	335
	8:45 AM	4	54	4	14	16	6	10	79	5	7	77	15	291
	9:00 AM	10	49	10	16	30	3	13	70	14	6	75	25	321
	9:15 AM	4	57	12	9	19	8	15	91	10	5	88	25	343
	VOLUMES	28	355	56	78	179	32	83	608	61	45	553	146	2,224
	APPROACH %	6%	81%	13%	27%	62%	11%	11%	81%	8%	6%	74%	20%	
APP/DEPART	439	/	584	289	/	281	752	/	746	744	/	613	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	19	224	36	49	84	22	53	332	39	23	319	90	1,290	
APPROACH %	7%	80%	13%	32%	54%	14%	13%	78%	9%	5%	74%	21%		
PEAK HR FACTOR	0.930			0.791			0.906			0.915			0.940	
APP/DEPART	279	/	367	155	/	144	424	/	419	432	/	360	0	
PM	5:00 PM	9	42	6	14	42	12	5	123	7	7	105	6	378
	5:15 PM	7	51	12	12	49	7	7	128	6	9	92	11	391
	5:30 PM	3	45	5	25	37	10	5	107	10	5	96	16	364
	5:45 PM	5	41	6	25	32	5	8	106	8	6	106	13	361
	6:00 PM	8	34	5	30	35	8	6	129	10	6	99	12	382
	6:15 PM	12	35	12	21	48	9	10	132	9	8	112	16	424
	6:30 PM	8	37	11	17	29	4	7	135	5	7	107	18	385
	6:45 PM	6	39	5	17	21	9	7	127	13	3	109	15	371
	VOLUMES	58	324	62	161	293	64	55	987	68	51	826	107	3,056
	APPROACH %	13%	73%	14%	31%	57%	12%	5%	89%	6%	5%	84%	11%	
APP/DEPART	444	/	486	518	/	412	1,110	/	1,211	984	/	947	0	
BEGIN PEAK HR	6:00 PM													
VOLUMES	34	145	33	85	133	30	30	523	37	24	427	61	1,562	
APPROACH %	16%	68%	16%	34%	54%	12%	5%	89%	6%	5%	83%	12%		
PEAK HR FACTOR	0.898			0.795			0.977			0.941			0.921	
APP/DEPART	212	/	236	248	/	194	590	/	641	512	/	491	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Wilshire

PROJECT #: SC1532
LOCATION #: 056
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	2	0	1	2	1	1	2	0	

AM	7:30 AM	43	100	55	12	108	3	5	124	37	60	108	8	663
	7:45 AM	43	91	74	16	78	5	3	125	47	53	148	7	690
	8:00 AM	25	67	76	14	106	4	3	150	45	55	139	15	699
	8:15 AM	30	94	55	16	87	7	4	118	31	42	141	7	632
	8:30 AM	26	73	57	10	109	5	2	121	37	61	153	5	659
	8:45 AM	33	82	49	13	96	1	2	112	36	57	155	6	642
	9:00 AM	36	76	66	14	93	5	2	152	35	48	146	5	678
	9:15 AM	27	72	58	12	85	5	2	136	37	52	147	8	641
	VOLUMES	263	655	490	107	762	35	23	1,038	305	428	1,137	61	5,304
	APPROACH %	19%	47%	35%	12%	84%	4%	2%	76%	22%	26%	70%	4%	
APP/DEPART	1,408	/	739	904	/	1,495	1,366	/	1,635	1,626	/	1,435	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	141	352	260	58	379	19	15	517	160	210	536	37	2,684	
APPROACH %	19%	47%	35%	13%	83%	4%	2%	75%	23%	27%	68%	5%		
PEAK HR FACTOR	0.905			0.919			0.874			0.937			0.960	
APP/DEPART	753	/	404	456	/	749	692	/	835	783	/	696	0	
PM	5:00 PM	32	63	45	11	78	7	2	156	38	27	146	13	618
	5:15 PM	46	99	54	14	72	9	4	136	34	27	166	7	668
	5:30 PM	51	94	66	4	79	6	7	160	44	25	147	12	695
	5:45 PM	59	124	63	12	55	9	4	153	26	32	181	12	730
	6:00 PM	49	90	75	6	60	8	5	140	51	35	138	10	667
	6:15 PM	49	90	46	9	67	4	5	149	44	31	154	12	660
	6:30 PM	34	96	51	10	69	8	3	151	36	35	137	11	641
	6:45 PM	54	90	67	4	57	1	2	178	55	27	133	8	676
	VOLUMES	374	746	467	70	537	52	32	1,223	328	239	1,202	85	5,355
	APPROACH %	24%	47%	29%	11%	81%	8%	2%	77%	21%	16%	79%	6%	
APP/DEPART	1,587	/	864	659	/	1,103	1,583	/	1,759	1,526	/	1,629	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	205	407	258	36	266	32	20	589	155	119	632	41	2,760	
APPROACH %	24%	47%	30%	11%	80%	10%	3%	77%	20%	15%	80%	5%		
PEAK HR FACTOR	0.884			0.879			0.905			0.880			0.945	
APP/DEPART	870	/	469	334	/	539	764	/	883	792	/	869	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Arizona

PROJECT #: SC1532
LOCATION #: 057
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	0	1	0	0	1	0	

AM	7:30 AM	29	199	19	1	194	1	2	9	20	11	9	7	501
	7:45 AM	26	191	33	4	182	1	2	16	18	12	18	5	508
	8:00 AM	13	155	22	2	200	1	5	21	14	20	15	9	477
	8:15 AM	24	180	21	1	145	4	5	11	20	12	32	11	466
	8:30 AM	28	157	25	4	182	4	3	17	21	11	36	8	496
	8:45 AM	43	159	33	3	157	9	3	28	20	17	31	13	516
	9:00 AM	34	162	37	8	153	14	10	36	24	16	36	13	543
	9:15 AM	19	138	24	4	175	6	7	25	12	17	30	10	467
	VOLUMES	216	1,341	214	27	1,388	40	37	163	149	116	207	76	3,974
	APPROACH %	12%	76%	12%	2%	95%	3%	11%	47%	43%	29%	52%	19%	
APP/DEPART	1,771	/	1,455	1,455	/	1,653	349	/	403	399	/	463	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	124	616	119	19	667	33	23	106	77	61	133	44	2,022	
APPROACH %	14%	72%	14%	3%	93%	5%	11%	51%	37%	26%	56%	18%		
PEAK HR FACTOR	0.914			0.946			0.736			0.915			0.931	
APP/DEPART	859	/	684	719	/	805	206	/	243	238	/	290	0	
PM	5:00 PM	13	124	14	5	127	6	1	48	52	17	35	8	450
	5:15 PM	15	199	18	2	124	5	3	47	42	10	41	3	509
	5:30 PM	18	195	14	14	146	6	2	51	41	6	35	13	541
	5:45 PM	20	222	22	7	109	6	5	46	33	13	26	9	518
	6:00 PM	31	193	21	10	134	6	5	44	46	13	32	13	548
	6:15 PM	18	181	16	6	130	3	3	42	45	6	28	4	482
	6:30 PM	15	173	19	10	133	5	4	35	34	10	28	6	472
	6:45 PM	33	193	15	3	122	7	4	27	44	9	29	10	496
	VOLUMES	163	1,480	139	57	1,025	44	27	340	337	84	254	66	4,016
	APPROACH %	9%	83%	8%	5%	91%	4%	4%	48%	48%	21%	63%	16%	
APP/DEPART	1,782	/	1,574	1,126	/	1,446	704	/	535	404	/	461	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	84	809	75	33	513	23	15	188	162	42	134	38	2,116	
APPROACH %	9%	84%	8%	6%	90%	4%	4%	52%	44%	20%	63%	18%		
PEAK HR FACTOR	0.917			0.857			0.961			0.922			0.965	
APP/DEPART	968	/	863	569	/	717	365	/	295	214	/	241	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Santa Monica

PROJECT #: SC1532
LOCATION #: 058
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	1	2	0	1	1	1	

AM	7:30 AM	16	237	41	16	202	2	2	49	15	22	39	10	651
	7:45 AM	23	215	44	19	193	3	5	57	23	21	52	36	691
	8:00 AM	17	174	37	16	203	3	3	76	23	26	66	15	659
	8:15 AM	27	204	47	15	152	7	6	75	12	21	68	17	651
	8:30 AM	22	176	55	24	199	3	9	83	25	21	80	30	727
	8:45 AM	26	200	47	18	158	4	3	75	24	31	70	38	694
	9:00 AM	24	199	40	15	165	4	4	67	36	24	77	32	687
	9:15 AM	31	166	40	15	189	6	3	76	26	33	78	16	679
	VOLUMES	186	1,571	351	138	1,461	32	35	558	184	199	530	194	5,439
	APPROACH %	9%	75%	17%	8%	90%	2%	5%	72%	24%	22%	57%	21%	
APP/DEPART	2,108	/	1,800	1,631	/	1,844	777	/	1,047	923	/	748	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	103	741	182	72	711	17	19	301	111	109	305	116	2,787	
APPROACH %	10%	72%	18%	9%	89%	2%	4%	70%	26%	21%	58%	22%		
PEAK HR FACTOR	0.940			0.885			0.921			0.953			0.958	
APP/DEPART	1,026	/	876	800	/	931	431	/	555	530	/	425	0	
PM	5:00 PM	19	120	29	22	176	14	5	120	37	34	89	16	681
	5:15 PM	20	202	40	28	155	10	10	103	42	36	89	25	760
	5:30 PM	24	188	34	33	160	7	8	107	32	33	87	25	738
	5:45 PM	26	237	32	23	133	5	6	95	38	22	101	28	746
	6:00 PM	23	202	35	33	173	5	9	100	54	27	80	29	770
	6:15 PM	35	171	43	31	155	8	11	118	36	22	81	30	741
	6:30 PM	21	191	40	29	156	7	5	119	35	23	96	22	744
	6:45 PM	34	211	38	39	124	14	5	117	39	17	81	27	746
	VOLUMES	202	1,522	291	238	1,232	70	59	879	313	214	704	202	5,926
	APPROACH %	10%	76%	14%	15%	80%	5%	5%	70%	25%	19%	63%	18%	
APP/DEPART	2,015	/	1,783	1,540	/	1,759	1,251	/	1,408	1,120	/	976	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	93	829	141	117	621	27	33	405	166	118	357	107	3,014	
APPROACH %	9%	78%	13%	15%	81%	4%	5%	67%	27%	20%	61%	18%		
PEAK HR FACTOR	0.901			0.906			0.926			0.964			0.979	
APP/DEPART	1,063	/	969	765	/	905	604	/	663	582	/	477	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Broadway

PROJECT #: SC1532
LOCATION #: 059
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Broadway			Broadway			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	
	1	2	0	1	2	0	1	1	1	1	1	0	

AM	7:30 AM	7	273	33	5	231	3	9	30	27	29	23	8	678
	7:45 AM	15	268	42	2	216	7	9	36	26	48	36	9	714
	8:00 AM	14	218	33	5	242	4	9	52	35	28	39	10	689
	8:15 AM	10	259	55	5	182	5	13	53	28	26	49	15	700
	8:30 AM	20	239	44	10	213	6	19	43	37	35	42	9	717
	8:45 AM	21	255	36	3	204	11	8	37	28	39	60	13	715
	9:00 AM	18	250	42	5	214	4	8	53	29	33	57	11	724
	9:15 AM	19	216	58	6	223	11	8	42	25	31	53	10	702
	VOLUMES	124	1,978	343	41	1,725	51	83	346	235	269	359	85	5,639
	APPROACH %	5%	81%	14%	2%	95%	3%	13%	52%	35%	38%	50%	12%	
APP/DEPART	2,445	/	2,147	1,817	/	2,229	664	/	729	713	/	534	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	78	960	180	24	854	32	43	175	119	138	212	43	2,858	
APPROACH %	6%	79%	15%	3%	94%	4%	13%	52%	35%	35%	54%	11%		
PEAK HR FACTOR	0.976			0.948			0.851			0.877			0.987	
APP/DEPART	1,218	/	1,047	910	/	1,111	337	/	378	393	/	322	0	
PM	5:00 PM	24	155	24	5	204	6	9	61	34	38	54	15	629
	5:15 PM	18	239	26	11	212	9	13	63	31	37	51	15	725
	5:30 PM	20	228	35	7	204	9	10	46	22	40	60	24	705
	5:45 PM	28	265	42	6	176	6	14	69	21	27	76	22	752
	6:00 PM	28	220	45	8	221	11	14	63	35	25	58	28	756
	6:15 PM	18	226	39	8	208	10	10	59	30	23	69	18	718
	6:30 PM	29	228	51	7	199	10	11	49	40	21	64	9	718
	6:45 PM	25	255	33	7	168	8	14	49	29	22	54	21	685
	VOLUMES	190	1,816	295	59	1,592	69	95	459	242	233	486	152	5,688
	APPROACH %	8%	79%	13%	3%	93%	4%	12%	58%	30%	27%	56%	17%	
APP/DEPART	2,301	/	2,064	1,720	/	2,065	796	/	814	871	/	745	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	103	939	177	29	804	37	49	240	126	96	267	77	2,944	
APPROACH %	8%	77%	15%	3%	92%	4%	12%	58%	30%	22%	61%	18%		
PEAK HR FACTOR	0.910			0.906			0.926			0.880			0.974	
APP/DEPART	1,219	/	1,065	870	/	1,025	415	/	447	440	/	407	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Colorado

PROJECT #: SC1532
LOCATION #: 060
CONTROL: SIGNAL

NOTES: <div style="text-align: center; color: blue; font-weight: bold;">WL illegal</div>	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	X	1	0	X	1	0	

AM	7:30 AM	14	317	18	4	255	1	0	7	14	0	17	3	650
	7:45 AM	11	323	18	5	310	3	0	8	13	0	18	3	712
	8:00 AM	15	296	26	4	299	0	0	8	18	0	16	3	685
	8:15 AM	14	322	33	3	242	3	0	12	7	1	18	7	662
	8:30 AM	19	280	32	5	248	3	0	13	12	0	25	4	641
	8:45 AM	24	336	24	4	304	4	0	12	15	1	28	12	764
	9:00 AM	11	307	27	5	270	3	0	20	17	0	24	6	690
	9:15 AM	13	311	28	5	286	1	0	10	14	0	24	12	704
	VOLUMES	121	2,492	206	35	2,214	18	0	90	110	2	170	50	5,508
	APPROACH %	4%	88%	7%	2%	98%	1%	0%	45%	55%	1%	77%	23%	
APP/DEPART	2,819	/	2,543	2,267	/	2,326	200	/	330	222	/	309	0	
BEGIN PEAK HR	8:30 AM													
VOLUMES	67	1,234	111	19	1,108	11	0	55	58	1	101	34	2,799	
APPROACH %	5%	87%	8%	2%	97%	1%	0%	49%	51%	1%	74%	25%		
PEAK HR FACTOR	0.919			0.912			0.764			0.829			0.916	
APP/DEPART	1,412	/	1,268	1,138	/	1,167	113	/	185	136	/	179	0	
PM	5:00 PM	18	213	13	5	275	7	0	21	33	0	40	10	635
	5:15 PM	34	291	13	6	273	3	0	19	39	0	31	15	724
	5:30 PM	33	295	8	14	237	7	0	16	24	0	36	13	683
	5:45 PM	32	320	10	9	212	8	0	15	11	1	38	7	663
	6:00 PM	20	290	10	4	269	1	0	12	28	0	35	10	679
	6:15 PM	29	284	11	5	264	7	0	20	26	1	37	8	692
	6:30 PM	32	301	13	5	256	6	0	15	22	0	28	9	687
	6:45 PM	22	313	13	10	209	5	0	23	29	3	33	11	671
	VOLUMES	220	2,307	91	58	1,995	44	0	141	212	5	278	83	5,434
	APPROACH %	8%	88%	3%	3%	95%	2%	0%	40%	60%	1%	76%	23%	
APP/DEPART	2,618	/	2,390	2,097	/	2,212	353	/	290	366	/	542	0	
BEGIN PEAK HR	5:15 PM													
VOLUMES	119	1,196	41	33	991	19	0	62	102	1	140	45	2,749	
APPROACH %	9%	88%	3%	3%	95%	2%	0%	38%	62%	1%	75%	24%		
PEAK HR FACTOR	0.936			0.925			0.707			0.949			0.949	
APP/DEPART	1,356	/	1,241	1,043	/	1,094	164	/	136	186	/	278	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: I-10 WB OFF-Ramp

PROJECT #: SC1532
LOCATION #: 061
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			I-10 WB OFF-Ramp			I-10 WB OFF-Ramp			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	X	X	3	0	X	X	X	1.5	1	1.5	

AM	7:30 AM	66	132	0	0	265	10	0	0	0	160	56	225	914
	7:45 AM	63	163	0	0	314	12	0	0	0	205	50	205	1,012
	8:00 AM	53	180	0	0	329	10	0	0	0	205	51	163	991
	8:15 AM	75	190	0	0	263	8	0	0	0	141	82	196	955
	8:30 AM	76	181	0	0	268	12	0	0	0	115	62	185	899
	8:45 AM	92	173	0	0	279	12	0	0	0	130	87	205	978
	9:00 AM	61	152	0	0	276	21	0	0	0	108	79	208	905
	9:15 AM	76	144	0	0	309	17	0	0	0	116	75	200	937
	VOLUMES	562	1,315	0	0	2,303	102	0	0	0	1,180	542	1,587	7,591
	APPROACH %	30%	70%	0%	0%	96%	4%	0%	0%	0%	36%	16%	48%	
APP/DEPART	1,877	/	2,902	2,405	/	3,483	0	/	0	3,309	/	1,206	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	257	665	0	0	1,171	40	0	0	0	711	239	789	3,872	
APPROACH %	28%	72%	0%	0%	97%	3%	0%	0%	0%	41%	14%	45%		
PEAK HR FACTOR	0.870			0.893			0.000			0.945			0.957	
APP/DEPART	922	/	1,454	1,211	/	1,882	0	/	0	1,739	/	536	0	
PM	5:00 PM	66	136	0	0	324	15	0	0	0	86	56	79	762
	5:15 PM	71	147	0	0	284	25	0	0	0	125	91	197	940
	5:30 PM	50	144	0	0	282	20	0	0	0	136	70	197	899
	5:45 PM	83	153	0	0	218	11	0	0	0	157	78	190	890
	6:00 PM	66	129	0	0	315	15	0	0	0	146	71	181	923
	6:15 PM	52	169	0	0	273	16	0	0	0	155	61	175	901
	6:30 PM	57	155	0	0	321	20	0	0	0	162	81	193	989
	6:45 PM	56	141	0	2	249	16	0	0	0	181	45	210	900
	VOLUMES	501	1,174	0	2	2,266	138	0	0	0	1,148	553	1,422	7,204
	APPROACH %	30%	70%	0%	0%	94%	6%	0%	0%	0%	37%	18%	46%	
APP/DEPART	1,675	/	2,598	2,406	/	3,415	0	/	0	3,123	/	1,191	0	
BEGIN PEAK HR	6:00 PM													
VOLUMES	231	594	0	2	1,158	67	0	0	0	644	258	759	3,713	
APPROACH %	28%	72%	0%	0%	94%	5%	0%	0%	0%	39%	16%	46%		
PEAK HR FACTOR	0.933			0.900			0.000			0.952			0.939	
APP/DEPART	825	/	1,355	1,227	/	1,803	0	/	0	1,661	/	555	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 24, 17
TUESDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: I-10 EB ON-Ramp

PROJECT #: SC1532
LOCATION #: 062
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			I-10 EB ON-Ramp			I-10 EB ON-Ramp			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

AM	7:30 AM	0	177	191	194	231	0	21	54	55	0	0	0	923
	7:45 AM	0	195	174	230	289	0	31	98	52	0	0	0	1,069
	8:00 AM	0	155	176	187	347	0	81	159	73	0	0	0	1,178
	8:15 AM	0	221	212	201	207	0	44	106	65	0	0	0	1,056
	8:30 AM	0	214	173	171	212	0	43	111	72	0	0	0	996
	8:45 AM	0	241	168	205	204	0	24	35	64	0	0	0	941
	9:00 AM	0	187	194	190	194	0	26	58	50	0	0	0	899
	9:15 AM	0	186	164	215	210	0	34	53	45	0	0	0	907
	VOLUMES	0	1,576	1,452	1,593	1,894	0	304	674	476	0	0	0	7,969
	APPROACH %	0%	52%	48%	46%	54%	0%	21%	46%	33%	0%	0%	0%	
APP/DEPART	3,028	/	1,880	3,487	/	2,370	1,454	/	3,719	0	/	0	0	
BEGIN PEAK HR	7:45 AM													
VOLUMES	0	785	735	789	1,055	0	199	474	262	0	0	0	4,299	
APPROACH %	0%	52%	48%	43%	57%	0%	21%	51%	28%	0%	0%	0%		
PEAK HR FACTOR	0.878			0.863			0.747			0.000			0.912	
APP/DEPART	1,520	/	984	1,844	/	1,317	935	/	1,998	0	/	0	0	
PM	5:00 PM	0	188	75	153	257	0	14	34	56	0	0	0	777
	5:15 PM	0	205	71	145	264	0	13	32	50	0	0	0	780
	5:30 PM	0	176	58	131	287	0	18	49	45	0	0	0	764
	5:45 PM	0	207	63	89	286	0	29	56	64	0	0	0	794
	6:00 PM	0	181	56	152	309	0	24	30	56	0	0	0	808
	6:15 PM	0	199	59	121	308	0	22	43	69	0	0	0	821
	6:30 PM	0	185	74	170	310	0	27	41	59	0	0	0	866
	6:45 PM	0	169	69	119	311	0	28	32	51	0	0	0	779
	VOLUMES	0	1,510	525	1,080	2,332	0	175	317	450	0	0	0	6,389
	APPROACH %	0%	74%	26%	32%	68%	0%	19%	34%	48%	0%	0%	0%	
APP/DEPART	2,035	/	1,685	3,412	/	2,782	942	/	1,922	0	/	0	0	
BEGIN PEAK HR	5:45 PM													
VOLUMES	0	772	252	532	1,213	0	102	170	248	0	0	0	3,289	
APPROACH %	0%	75%	25%	30%	70%	0%	20%	33%	48%	0%	0%	0%		
PEAK HR FACTOR	0.948			0.909			0.872			0.000			0.949	
APP/DEPART	1,024	/	874	1,745	/	1,461	520	/	954	0	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Pacific Coast
EAST & WEST: California Incline

PROJECT #: SC1406
LOCATION #: 001
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">NB/SB queue. NR illegal</p>	AM PM MD OTHER OTHER	◀ W S ▶	▲ N S ▼	E ▶
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Pacific Coast			Pacific Coast			California Incline			California Incline			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	11	562	0	104	639	11	5	5	6	58	2	68	1,471
	1:15 PM	14	488	0	90	531	12	5	6	13	48	5	103	1,315
	1:30 PM	2	418	0	97	593	9	6	11	6	38	6	75	1,261
	1:45 PM	13	534	1	60	608	7	8	6	5	40	8	84	1,374
	2:00 PM	10	531	1	111	511	10	6	11	10	39	1	85	1,326
	2:15 PM	7	587	0	76	518	8	5	9	8	49	2	97	1,366
	2:30 PM	14	560	2	83	567	9	6	9	7	29	2	43	1,331
	2:45 PM	7	448	0	103	578	7	6	13	11	46	4	80	1,303
	3:00 PM	7	494	1	96	636	4	3	10	13	39	3	62	1,368
	3:15 PM	8	581	2	55	652	4	4	3	2	29	3	73	1,416
	3:30 PM	7	472	1	106	628	6	2	11	9	43	6	97	1,388
	3:45 PM	9	454	1	90	612	5	4	4	0	36	6	88	1,309
	4:00 PM	15	497	1	98	562	8	3	7	10	46	5	85	1,337
	4:15 PM	8	552	0	64	519	4	10	11	9	41	4	73	1,295
	4:30 PM	8	546	0	92	620	7	5	6	6	35	4	72	1,401
	4:45 PM	16	467	1	70	559	6	6	14	8	40	8	77	1,272
	VOLUMES	156	8,191	11	1,395	9,333	117	84	136	123	656	69	1,262	21,533
	APPROACH %	2%	98%	0%	13%	86%	1%	24%	40%	36%	33%	3%	64%	
APP/DEPART	8,358	/	9,537	10,845	/	10,121	343	/	1,542	1,987	/	333	0	
BEGIN PEAK HR	3:00 PM													
VOLUMES	31	2,001	5	347	2,528	19	13	28	24	147	18	320	5,481	
APPROACH %	2%	98%	0%	12%	87%	1%	20%	43%	37%	30%	4%	66%		
PEAK HR FACTOR	0.862			0.978			0.625			0.830			0.968	
APP/DEPART	2,037	/	2,334	2,894	/	2,701	65	/	380	485	/	66	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: California

PROJECT #: SC1406
LOCATION #: 002
CONTROL: SIGNAL

NOTES: WB queue	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			California			California			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	1	0.5	0.5	1	0	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	Time	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1:00 PM	66	95	19	7	101	31	11	42	46	14	42	15	489
	1:15 PM	71	99	17	8	105	33	17	28	44	11	29	28	490
	1:30 PM	63	110	26	6	107	40	13	27	62	12	28	25	519
	1:45 PM	63	83	20	4	117	27	8	20	34	11	30	20	437
	2:00 PM	65	65	21	6	126	19	22	42	66	7	33	14	486
	2:15 PM	80	94	24	11	116	23	14	29	69	7	48	16	531
	2:30 PM	58	97	37	11	122	27	17	24	43	15	39	19	509
	2:45 PM	57	101	29	16	103	13	16	31	50	14	17	25	472
	3:00 PM	64	89	28	13	102	20	18	32	64	11	33	13	487
	3:15 PM	71	108	24	11	102	21	10	25	45	12	28	12	469
	3:30 PM	74	99	20	11	109	25	20	29	47	9	33	23	499
	3:45 PM	78	109	28	14	110	24	17	33	56	7	31	10	517
	4:00 PM	81	85	23	9	97	14	17	27	51	6	32	13	455
	4:15 PM	75	100	33	6	120	23	11	36	56	8	42	21	531
	4:30 PM	58	109	28	9	126	32	21	24	38	9	29	18	501
	4:45 PM	68	85	36	10	126	25	15	23	68	17	22	15	510
VOLUMES	1,092	1,528	413	152	1,789	397	247	472	839	170	516	287	7,902	
APPROACH %	36%	50%	14%	7%	77%	17%	16%	30%	54%	17%	53%	29%		
APP/DEPART	3,033	/	2,063	2,338	/	2,796	1,558	/	1,039	973	/	2,004	0	
BEGIN PEAK HR	3:45 PM													
VOLUMES	292	403	112	38	453	93	66	120	201	30	134	62	2,004	
APPROACH %	36%	50%	14%	7%	78%	16%	17%	31%	52%	13%	59%	27%		
PEAK HR FACTOR	0.938			0.874			0.913			0.796			0.944	
APP/DEPART	807	/	532	584	/	683	387	/	270	226	/	519	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Ocean EAST & WEST: Wilshire	PROJECT #: SC1406 LOCATION #: 003 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	2	0	1	2	X	X	X	X	1.5	X	1.5	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	2	116	43	42	137	0	0	0	0	74	0	60	474
	1:15 PM	4	122	31	31	162	0	0	0	0	59	0	49	458
	1:30 PM	0	99	34	41	151	0	0	0	0	59	0	68	452
	1:45 PM	1	108	32	34	138	0	0	0	0	57	0	67	437
	2:00 PM	2	122	23	30	145	0	0	0	0	77	0	68	467
	2:15 PM	3	126	23	46	131	0	0	0	0	67	0	66	462
	2:30 PM	3	123	38	35	121	0	0	0	0	53	0	64	437
	2:45 PM	0	113	38	48	145	0	0	0	0	64	0	82	490
	3:00 PM	0	104	48	46	160	0	0	0	0	58	0	65	481
	3:15 PM	0	138	24	41	162	0	0	0	0	65	0	73	503
	3:30 PM	1	123	61	51	132	0	0	0	0	75	0	83	526
	3:45 PM	0	140	45	66	123	0	0	0	0	52	0	78	504
	4:00 PM	3	129	41	37	96	0	0	0	0	55	0	70	431
	4:15 PM	0	116	40	32	116	0	0	0	0	51	0	71	426
	4:30 PM	0	120	31	47	128	0	0	0	0	47	0	87	460
	4:45 PM	1	123	49	38	153	0	0	0	0	57	0	59	480
	VOLUMES	20	1,922	601	665	2,200	0	0	0	0	970	0	1,110	7,488
APPROACH %	1%	76%	24%	23%	77%	0%	0%	0%	0%	47%	0%	53%		
APP/DEPART	2,543	/	3,036	2,865	/	3,184	0	/	1,268	2,080	/	0	0	
BEGIN PEAK HR	3:00 PM													
VOLUMES	1	505	178	204	577	0	0	0	0	250	0	299	2,014	
APPROACH %	0%	74%	26%	26%	74%	0%	0%	0%	0%	46%	0%	54%		
PEAK HR FACTOR	0.924			0.948			0.000			0.869			0.957	
APP/DEPART	684	/	805	781	/	828	0	/	381	549	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Arizona

PROJECT #: SC1406
LOCATION #: 004
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER OTHER		S	
			▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	0	1	2	X	X	X	X	0	X	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	0	141	29	24	193	0	0	0	0	13	0	14	414
	1:15 PM	1	136	26	15	210	0	0	0	0	19	0	17	424
	1:30 PM	0	106	24	32	158	0	0	0	0	15	0	18	353
	1:45 PM	0	123	23	13	174	0	0	0	0	17	0	13	363
	2:00 PM	0	128	34	25	199	0	0	0	0	23	0	23	432
	2:15 PM	0	122	31	23	186	0	0	0	0	26	0	22	410
	2:30 PM	1	131	42	23	154	0	0	0	0	21	0	30	402
	2:45 PM	1	136	37	28	186	0	0	0	0	20	0	18	426
	3:00 PM	0	120	28	20	193	0	0	0	0	39	0	23	423
	3:15 PM	1	138	39	21	189	0	0	0	0	19	0	27	434
	3:30 PM	0	147	36	48	139	0	0	0	0	24	0	36	430
	3:45 PM	0	152	41	36	156	0	0	0	0	15	0	27	427
	4:00 PM	0	132	24	26	132	0	0	0	0	24	0	35	373
	4:15 PM	0	117	30	23	139	0	0	0	0	33	0	33	375
	4:30 PM	0	127	40	21	155	0	0	0	0	29	0	25	397
	4:45 PM	0	131	37	25	177	0	0	0	0	29	0	31	430
	VOLUMES	4	2,087	521	403	2,740	0	0	0	0	366	0	392	6,513
APPROACH %	0%	80%	20%	13%	87%	0%	0%	0%	0%	48%	0%	52%		
APP/DEPART	2,612	/	2,483	3,143	/	3,109	0	/	921	758	/	0	0	
BEGIN PEAK HR	3:00 PM													
VOLUMES	1	557	144	125	677	0	0	0	0	97	0	113	1,714	
APPROACH %	0%	79%	21%	16%	84%	0%	0%	0%	0%	46%	0%	54%		
PEAK HR FACTOR	0.909		0.941		0.000		0.847		0.987					
APP/DEPART	702	/	672	802	/	775	0	/	267	210	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Santa Monica

PROJECT #: SC1406
LOCATION #: 005
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	0	1	2	X	X	X	X	1	X	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	1	141	51	32	172	0	0	0	0	30	0	25	452
	1:15 PM	1	149	49	33	205	0	0	0	0	42	0	20	499
	1:30 PM	1	111	50	33	168	0	0	0	0	34	0	28	425
	1:45 PM	1	115	41	35	154	0	0	0	0	37	0	22	405
	2:00 PM	1	156	46	42	183	0	0	0	0	34	0	20	482
	2:15 PM	0	141	54	33	177	0	0	0	0	40	0	21	466
	2:30 PM	1	123	55	32	142	0	0	0	0	44	0	33	430
	2:45 PM	0	133	48	33	176	0	0	0	0	44	0	42	476
	3:00 PM	1	124	59	36	186	0	0	0	0	41	0	22	469
	3:15 PM	0	146	71	32	147	0	0	0	0	46	0	36	478
	3:30 PM	0	133	55	42	125	0	0	0	0	45	0	36	436
	3:45 PM	0	144	56	38	138	0	0	0	0	38	0	39	453
	4:00 PM	0	129	61	34	128	0	0	0	0	35	0	25	412
	4:15 PM	0	130	53	34	144	0	0	0	0	38	0	28	427
4:30 PM	1	141	51	34	144	0	0	0	0	45	0	21	437	
4:45 PM	1	134	49	28	181	0	0	0	0	36	0	39	468	
VOLUMES	9	2,150	849	551	2,570	0	0	0	0	629	0	457	7,215	
APPROACH %	0%	71%	28%	18%	82%	0%	0%	0%	0%	58%	0%	42%		
APP/DEPART	3,008	/	2,610	3,121	/	3,208	0	/	1,397	1,086	/	0	0	
BEGIN PEAK HR	2:45 PM													
VOLUMES	1	536	233	143	634	0	0	0	0	176	0	136	1,859	
APPROACH %	0%	70%	30%	18%	82%	0%	0%	0%	0%	56%	0%	44%		
PEAK HR FACTOR	0.887		0.875		0.000		0.907		0.972					
APP/DEPART	770	/	672	777	/	811	0	/	376	312	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Broadway

PROJECT #: SC1406
LOCATION #: 170
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	2	0	1	2	X	X	X	X	1	X	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	0	157	77	21	182	0	0	0	0	26	0	21	484
	1:15 PM	0	189	60	20	198	0	0	0	0	43	0	29	539
	1:30 PM	0	129	53	29	183	0	0	0	0	21	0	25	440
	1:45 PM	0	144	63	30	171	0	0	0	0	39	0	34	481
	2:00 PM	0	149	67	26	155	0	0	0	0	33	0	29	459
	2:15 PM	0	153	70	23	140	0	0	0	0	25	0	33	444
	2:30 PM	0	160	73	22	233	0	0	0	0	30	0	24	542
	2:45 PM	0	125	63	35	249	0	0	0	0	35	0	54	561
	3:00 PM	0	145	60	25	185	0	0	0	0	32	0	49	496
	3:15 PM	0	149	60	12	144	0	0	0	0	35	0	51	451
	3:30 PM	0	157	76	20	148	0	0	0	0	35	0	52	488
	3:45 PM	0	147	71	24	140	0	0	0	0	39	0	50	471
	4:00 PM	0	127	71	33	145	0	0	0	0	37	0	40	453
	4:15 PM	0	146	63	20	156	0	0	0	0	35	0	36	456
	4:30 PM	0	159	52	32	198	0	0	0	0	36	0	35	512
	4:45 PM	0	146	71	19	179	0	0	0	0	41	0	35	491
	VOLUMES	0	2,382	1,050	391	2,806	0	0	0	0	542	0	597	7,776
APPROACH %	0%	69%	31%	12%	88%	0%	0%	0%	0%	48%	0%	52%		
APP/DEPART	3,439	/	2,980	3,198	/	3,355	0	/	1,441	1,139	/	0	0	
BEGIN PEAK HR	2:30 PM													
VOLUMES	0	579	256	94	811	0	0	0	0	132	0	178	2,051	
APPROACH %	0%	69%	31%	10%	90%	0%	0%	0%	0%	43%	0%	57%		
PEAK HR FACTOR	0.896			0.798			0.000			0.871			0.914	
APP/DEPART	835	/	758	906	/	943	0	/	350	310	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Colorado

PROJECT #: SC1406
LOCATION #: 006
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">NL closed all the time.</p>	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	X	X	2	0	0.5	X	1.5	0.5	0.5	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	1	195	0	0	192	16	3	0	14	41	6	39	507
	1:15 PM	0	202	0	0	224	0	4	0	16	46	0	40	532
	1:30 PM	0	221	0	0	213	4	2	0	14	41	2	41	538
	1:45 PM	0	169	0	0	204	0	4	0	18	53	1	46	495
	2:00 PM	0	179	0	0	181	0	3	0	9	60	1	54	487
	2:15 PM	0	194	0	0	176	0	1	0	12	35	11	49	478
	2:30 PM	0	183	0	0	155	8	2	0	14	62	8	47	479
	2:45 PM	0	174	0	0	151	21	5	0	13	44	21	49	478
	3:00 PM	0	184	0	0	133	20	2	0	19	54	10	35	457
	3:15 PM	1	180	0	0	124	8	3	0	12	46	28	41	443
	3:30 PM	0	187	0	0	186	8	7	0	20	53	0	42	503
	3:45 PM	0	188	0	0	230	0	4	0	21	63	0	37	543
	4:00 PM	0	185	0	0	209	0	1	0	18	48	0	32	493
	4:15 PM	0	191	0	0	216	0	2	0	12	48	0	39	508
	4:30 PM	0	192	0	0	211	0	0	0	8	59	0	37	507
	4:45 PM	0	208	0	0	208	0	5	0	10	48	0	23	502
	VOLUMES	2	3,032	0	0	3,013	85	48	0	230	801	88	651	7,950
APPROACH %	0%	100%	0%	0%	97%	3%	17%	0%	83%	52%	6%	42%		
APP/DEPART	3,034	/	3,731	3,098	/	4,044	278	/	0	1,540	/	175	0	
BEGIN PEAK HR	1:00 PM													
VOLUMES	1	787	0	0	833	20	13	0	62	181	9	166	2,072	
APPROACH %	0%	100%	0%	0%	98%	2%	17%	0%	83%	51%	3%	47%		
PEAK HR FACTOR	0.891		0.952		0.852		0.890		0.963					
APP/DEPART	788	/	966	853	/	1,076	75	/	0	356	/	30	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Ocean EAST & WEST: Moomat Ahiko	PROJECT #: SC1406 LOCATION #: 007 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Moomat Ahiko			Moomat Ahiko			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	2	2	X	X	2	1	1	X	2	X	X	X	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	80	175	0	0	226	30	35	0	123	0	0	0	669
	1:15 PM	99	177	0	0	210	35	39	0	140	0	0	0	700
	1:30 PM	105	156	0	0	184	41	33	0	150	0	0	0	669
	1:45 PM	100	154	0	0	191	51	26	0	144	0	0	0	666
	2:00 PM	89	172	0	0	200	42	29	0	136	0	0	0	668
	2:15 PM	80	159	0	0	195	32	29	0	118	0	0	0	613
	2:30 PM	99	166	0	0	219	46	34	0	120	0	0	0	684
	2:45 PM	77	138	0	0	223	42	33	0	126	0	0	0	639
	3:00 PM	79	149	0	0	213	32	37	0	145	0	0	0	655
	3:15 PM	94	182	0	0	198	31	32	0	133	0	0	0	670
	3:30 PM	96	147	0	0	200	29	39	0	141	0	0	0	652
	3:45 PM	95	166	0	0	189	37	35	0	153	0	0	0	675
	4:00 PM	80	145	0	0	170	22	36	0	136	0	0	0	589
	4:15 PM	97	159	0	0	210	33	36	0	133	0	0	0	668
	4:30 PM	93	162	0	0	220	33	38	0	121	0	0	0	667
	4:45 PM	90	165	0	0	208	46	32	0	137	0	0	0	678
	VOLUMES	1,453	2,572	0	0	3,256	582	543	0	2,156	0	0	0	10,606
APPROACH %	36%	64%	0%	0%	85%	15%	20%	0%	79%	0%	0%	0%		
APP/DEPART	4,027	/	3,117	3,840	/	5,414	2,739	/	0	0	/	2,075	0	
BEGIN PEAK HR	1:15 PM													
VOLUMES	393	659	0	0	785	169	127	0	570	0	0	0	2,717	
APPROACH %	37%	63%	0%	0%	82%	18%	18%	0%	80%	0%	0%	0%		
PEAK HR FACTOR	0.953			0.974			0.959			0.000			0.968	
APP/DEPART	1,052	/	787	955	/	1,355	710	/	0	0	/	575	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 28, 18 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Ocean EAST & WEST: Olympic	PROJECT #: SC1844 LOCATION #: 10 CONTROL: SIGNAL
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NOTES: From 15:45 SL closed. ALL Bounds queue. NL/ET/WT illegal.	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Olympic			Olympic			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	2	0	1	2	0	X	X	0	0.5	X	0.5	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	0	198	28	75	239	14	0	1	9	19	1	37	621
	1:15 PM	0	218	17	66	243	7	0	0	10	15	0	38	614
	1:30 PM	0	203	25	75	224	9	0	0	2	17	0	43	598
	1:45 PM	0	198	11	66	260	4	0	1	18	21	0	60	639
	2:00 PM	0	185	29	63	225	3	0	0	16	19	0	51	591
	2:15 PM	0	237	29	61	227	6	0	0	6	14	0	46	626
	2:30 PM	0	216	25	69	271	3	0	0	14	15	0	54	667
	2:45 PM	0	198	27	77	211	10	0	2	11	24	0	59	619
	3:00 PM	1	237	29	61	239	9	0	0	3	21	0	33	633
	3:15 PM	0	228	30	56	223	7	0	2	8	18	0	32	604
	3:30 PM	0	231	16	46	203	7	0	0	7	26	0	35	571
	3:45 PM	0	222	25	0	264	21	0	0	1	17	0	41	591
	4:00 PM	0	235	35	0	271	24	0	0	2	21	0	36	624
	4:15 PM	0	217	33	0	258	12	0	0	6	22	0	27	575
	4:30 PM	0	199	32	1	211	15	0	0	3	12	0	35	508
	4:45 PM	0	240	32	0	275	6	0	0	5	28	0	31	617
VOLUMES	1	3,462	423	716	3,844	157	0	6	121	309	1	658	9,966	
APPROACH %	0%	84%	10%	15%	81%	3%	0%	5%	95%	32%	0%	68%		
APP/DEPART	4,128	/	4,144	4,741	/	4,516	127	/	1,147	970	/	159	0	
BEGIN PEAK HR	2:15 PM													
VOLUMES	1	888	110	268	948	28	0	2	34	74	0	192	2,605	
APPROACH %	0%	84%	10%	21%	76%	2%	0%	6%	94%	28%	0%	72%		
PEAK HR FACTOR	0.932			0.907			0.643			0.801			0.956	
APP/DEPART	1,055	/	1,084	1,248	/	1,112	36	/	380	266	/	29	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Pico

PROJECT #: SC1406
LOCATION #: 008A
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Pico			Pico			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	2	0	1	2	0	1	2	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	16	164	44	29	134	25	17	41	3	20	76	65	634
	1:15 PM	21	161	64	42	150	24	29	39	7	22	50	58	667
	1:30 PM	7	151	54	26	134	34	30	40	8	22	59	65	630
	1:45 PM	14	108	58	49	134	18	19	38	9	35	56	65	603
	2:00 PM	11	148	36	34	136	33	24	42	5	23	80	67	639
	2:15 PM	16	156	52	44	134	22	14	41	11	38	55	67	650
	2:30 PM	11	152	56	40	142	15	16	49	14	18	70	55	638
	2:45 PM	14	169	60	37	129	26	18	46	18	16	68	63	664
	3:00 PM	11	126	71	44	108	32	25	43	8	27	76	53	624
	3:15 PM	14	157	46	24	143	21	16	48	11	24	66	66	636
	3:30 PM	13	124	68	35	132	23	24	56	6	30	74	76	661
	3:45 PM	9	168	52	37	165	34	14	25	6	22	74	52	658
	4:00 PM	11	159	56	35	137	38	11	31	15	20	73	81	667
	4:15 PM	13	144	46	48	162	34	20	40	12	30	69	70	688
	4:30 PM	18	135	53	29	116	27	14	35	12	22	93	71	625
	4:45 PM	10	150	72	31	124	18	15	31	5	32	77	64	629
	VOLUMES	209	2,372	888	584	2,180	424	306	645	150	401	1,116	1,038	10,313
	APPROACH %	6%	68%	26%	18%	68%	13%	28%	59%	14%	16%	44%	41%	
	APP/DEPART	3,469	/	3,716	3,188	/	2,731	1,101	/	2,118	2,555	/	1,748	0
	BEGIN PEAK HR	3:30 PM												
VOLUMES	46	595	222	155	596	129	69	152	39	102	290	279	2,674	
APPROACH %	5%	69%	26%	18%	68%	15%	27%	58%	15%	15%	43%	42%		
PEAK HR FACTOR	0.942		0.902		0.756		0.932				0.972			
APP/DEPART	863	/	944	880	/	737	260	/	528	671	/	465	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Ocean
EAST & WEST: Pico

PROJECT #: SC1406
LOCATION #: 008B
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Ocean			Ocean			Pico			Pico			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	X	X	X	1	2	0	1	2	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	0	0	0	0	35	0	0	0	6	52	0	0	93
	1:15 PM	0	0	0	0	39	0	0	0	4	47	0	0	90
	1:30 PM	0	0	0	0	48	0	0	0	6	38	0	0	92
	1:45 PM	0	0	0	0	40	0	0	0	6	31	0	0	77
	2:00 PM	0	0	0	0	38	0	0	0	3	38	0	0	79
	2:15 PM	0	0	0	0	29	0	0	0	12	28	0	0	69
	2:30 PM	2	0	0	0	26	0	0	0	7	28	0	0	63
	2:45 PM	0	0	0	0	33	0	0	0	7	32	0	0	72
	3:00 PM	3	0	0	0	23	0	0	0	9	23	0	0	58
	3:15 PM	1	0	0	0	28	0	0	0	5	50	0	0	84
	3:30 PM	1	0	0	0	28	0	0	0	9	24	0	0	62
	3:45 PM	1	0	0	0	27	0	0	0	10	33	0	0	71
	4:00 PM	0	0	0	0	32	0	0	0	8	34	0	0	74
	4:15 PM	0	0	0	0	41	0	0	0	6	18	0	0	65
	4:30 PM	1	0	0	0	25	0	0	0	8	30	0	0	64
	4:45 PM	0	0	0	0	38	0	0	0	12	15	0	0	65
	VOLUMES	9	0	0	0	530	0	0	0	118	521	0	0	1,178
	APPROACH %	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%	
APP/DEPART	9	/	0	530	/	1,178	118	/	0	521	/	0	0	
BEGIN PEAK HR	1:00 PM													
VOLUMES	0	0	0	0	162	0	0	0	22	168	0	0	352	
APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	100%	100%	0%	0%		
PEAK HR FACTOR	0.000			0.844			0.917			0.808			0.946	
APP/DEPART	0	/	0	162	/	352	22	/	0	168	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 22, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: 2nd EAST & WEST: Wilshire	PROJECT #: SC1406 LOCATION #: 011 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	0	1	0	1	2	0	1	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	19	30	55	10	12	14	8	57	16	42	121	14	398
	1:15 PM	27	29	63	2	15	13	3	52	10	35	105	13	367
	1:30 PM	15	31	66	5	10	15	10	69	9	44	126	18	418
	1:45 PM	20	14	60	10	15	7	11	45	5	36	97	21	341
	2:00 PM	23	23	63	8	22	6	4	80	7	29	103	26	394
	2:15 PM	18	20	35	9	13	10	8	60	10	33	114	14	344
	2:30 PM	11	22	49	6	19	16	8	81	12	31	106	16	377
	2:45 PM	12	24	43	6	19	8	8	74	14	26	116	17	367
	3:00 PM	14	20	49	8	25	9	12	78	15	42	118	14	404
	3:15 PM	20	23	42	13	10	7	7	60	14	29	93	8	326
	3:30 PM	9	20	46	6	18	12	4	63	12	33	96	24	343
	3:45 PM	21	31	55	10	23	14	10	69	10	32	102	23	400
	4:00 PM	14	26	61	12	13	12	6	62	12	37	114	11	380
	4:15 PM	19	26	54	10	15	20	8	66	11	43	104	20	396
	4:30 PM	18	22	52	13	15	18	9	51	10	39	109	17	373
	4:45 PM	20	35	51	8	22	12	10	66	19	48	102	22	415
	VOLUMES	280	396	844	136	266	193	126	1,033	186	579	1,726	278	6,043
APPROACH %	18%	26%	56%	23%	45%	32%	9%	77%	14%	22%	67%	11%		
APP/DEPART	1,520	/	797	595	/	1,025	1,345	/	2,020	2,583	/	2,201	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	71	109	218	43	65	62	33	245	52	167	429	70	1,564	
APPROACH %	18%	27%	55%	25%	38%	36%	10%	74%	16%	25%	64%	11%		
PEAK HR FACTOR	0.939		0.924		0.868		0.968						0.942	
APP/DEPART	398	/	211	170	/	283	330	/	508	666	/	562	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sun, Oct 15, 17
SUNDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Arizona

PROJECT #: SC1406
LOCATION #: 12
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	2nd			2nd			Arizona			Arizona			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	13	65	30	6	23	3	5	20	17	9	28	17	236
	1:15 PM	14	62	28	7	25	3	10	13	10	8	21	15	216
	1:30 PM	15	50	20	8	26	6	5	21	6	8	21	8	194
	1:45 PM	14	52	45	7	24	4	10	25	13	11	26	28	259
	2:00 PM	20	45	30	6	28	9	7	22	9	7	22	9	214
	2:15 PM	18	60	33	11	28	11	7	16	9	9	19	15	236
	2:30 PM	16	47	24	11	18	5	8	17	9	9	18	17	199
	2:45 PM	24	52	26	5	25	6	4	26	21	18	15	18	240
	3:00 PM	16	48	28	12	26	2	14	28	14	12	22	31	253
	3:15 PM	22	56	28	3	27	4	9	14	15	18	17	24	237
	3:30 PM	14	58	25	7	26	2	13	27	18	9	27	9	235
	3:45 PM	18	57	43	6	24	8	4	15	9	9	22	25	240
	4:00 PM	19	62	28	7	30	4	8	18	11	13	18	15	233
	4:15 PM	21	55	36	9	20	5	9	21	14	14	20	25	249
	4:30 PM	12	47	38	10	28	9	11	22	14	25	15	21	252
	4:45 PM	29	57	28	5	23	9	16	25	16	11	15	23	257
	VOLUMES	285	873	490	120	401	90	140	330	205	190	326	300	3,750
	APPROACH %	17%	53%	30%	20%	66%	15%	21%	49%	30%	23%	40%	37%	
	APP/DEPART	1,648	/	1,318	611	/	803	675	/	936	816	/	693	0
	BEGIN PEAK HR	4:00 PM												
VOLUMES	81	221	130	31	101	27	44	86	55	63	68	84	991	
APPROACH %	19%	51%	30%	19%	64%	17%	24%	46%	30%	29%	32%	39%		
PEAK HR FACTOR	0.947			0.846			0.811			0.881			0.964	
APP/DEPART	432	/	350	159	/	219	185	/	247	215	/	175	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 22, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: 2nd EAST & WEST: Santa Monica	PROJECT #: SC1406 LOCATION #: 013 CONTROL: SIGNAL
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NOTES:	AM PM MD OTHER OTHER	◀ W	▲ N S ▼	E ▶
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	2nd			2nd			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	0	2	0	0	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	14	43	44	16	38	8	10	50	21	20	54	50	368
	1:15 PM	10	56	33	16	42	13	11	50	27	16	31	52	357
	1:30 PM	16	51	45	24	34	14	14	45	17	21	33	44	358
	1:45 PM	9	40	31	18	39	12	14	48	24	17	53	52	357
	2:00 PM	18	42	40	12	37	8	11	48	28	17	34	42	337
	2:15 PM	10	38	41	8	32	13	9	62	14	20	59	60	366
	2:30 PM	18	48	42	10	40	13	14	46	24	15	41	43	354
	2:45 PM	12	53	35	8	52	13	15	50	22	14	31	49	354
	3:00 PM	14	77	50	12	38	5	4	54	32	22	34	36	378
	3:15 PM	18	62	51	17	31	17	11	56	14	18	37	47	379
	3:30 PM	18	56	43	13	48	9	7	53	25	17	42	42	373
	3:45 PM	15	56	41	13	32	17	17	55	23	18	43	58	388
	4:00 PM	12	45	49	14	34	17	12	45	13	15	46	51	353
	4:15 PM	14	57	45	20	34	15	12	52	12	21	32	29	343
	4:30 PM	10	67	31	21	31	25	12	53	8	15	36	33	342
	4:45 PM	22	77	44	16	36	10	12	47	17	14	46	32	373
	VOLUMES	230	868	665	238	598	209	185	814	321	280	652	720	5,780
APPROACH %	13%	49%	38%	23%	57%	20%	14%	62%	24%	17%	39%	44%		
APP/DEPART	1,763	/	1,779	1,045	/	1,201	1,320	/	1,711	1,652	/	1,089	0	
BEGIN PEAK HR	3:00 PM													
VOLUMES	65	251	185	55	149	48	39	218	94	75	156	183	1,518	
APPROACH %	13%	50%	37%	22%	59%	19%	11%	62%	27%	18%	38%	44%		
PEAK HR FACTOR	0.888		0.900		0.924		0.870		0.978					
APP/DEPART	501	/	474	252	/	320	351	/	457	414	/	267	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: 2nd
EAST & WEST: Broadway

PROJECT #: SC1406
LOCATION #: 014
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER OTHER		S	
			▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Broadway			Broadway			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	
	1	1	1	1	1	0	1	1	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	11	55	35	21	36	16	9	57	22	25	47	38	372
	1:15 PM	14	46	37	27	55	6	18	54	19	28	42	53	399
	1:30 PM	17	58	43	19	45	9	21	36	31	32	32	51	394
	1:45 PM	5	52	35	20	48	5	19	57	23	29	46	56	395
	2:00 PM	11	61	45	19	55	11	22	43	31	29	40	55	422
	2:15 PM	20	56	44	16	46	8	23	44	19	35	46	31	388
	2:30 PM	16	58	52	14	48	4	22	49	13	27	48	54	405
	2:45 PM	10	63	41	17	67	8	14	40	23	33	42	47	405
	3:00 PM	17	54	47	21	54	10	17	55	25	22	37	49	408
	3:15 PM	22	26	34	24	42	6	16	39	27	35	63	46	380
	3:30 PM	15	59	49	20	53	7	13	56	26	29	41	50	418
	3:45 PM	19	61	56	19	50	12	24	45	28	26	50	51	441
	4:00 PM	17	63	44	19	32	12	13	47	16	29	44	53	389
	4:15 PM	16	47	42	19	32	7	22	42	16	22	37	61	363
	4:30 PM	27	46	49	13	29	6	21	49	18	25	35	42	360
	4:45 PM	21	42	54	14	35	8	15	53	17	34	70	13	376
	VOLUMES	258	847	707	302	727	135	289	766	354	460	720	750	6,315
	APPROACH %	14%	47%	39%	26%	62%	12%	21%	54%	25%	24%	37%	39%	
APP/DEPART	1,812	/	1,892	1,164	/	1,539	1,409	/	1,771	1,930	/	1,113	0	
BEGIN PEAK HR	3:00 PM													
VOLUMES	73	200	186	84	199	35	70	195	106	112	191	196	1,647	
APPROACH %	16%	44%	41%	26%	63%	11%	19%	53%	29%	22%	38%	39%		
PEAK HR FACTOR	0.844			0.935			0.956			0.866			0.934	
APP/DEPART	459	/	467	318	/	415	371	/	466	499	/	299	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 22, 17 SATURDAY	LOCATION: Santa Monica	PROJECT #: SC1406	
	NORTH & SOUTH: 2nd	LOCATION #: 15	
	EAST & WEST: Colorado	CONTROL: SIGNAL	

NOTES: SR was closed after 15:45	AM PM MD OTHER OTHER	◀ W	▲ N S ▼	E ▶
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	2nd			2nd			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	X	X	1	1	X	X	X	0.5	1	0.5	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	5	94	0	0	65	19	0	0	0	27	40	44	294
	1:15 PM	14	72	0	0	65	26	0	0	0	40	25	53	295
	1:30 PM	7	87	0	0	83	35	0	0	0	19	43	37	311
	1:45 PM	9	70	0	0	65	24	0	0	0	30	54	47	299
	2:00 PM	10	92	0	0	90	32	0	0	0	25	52	41	342
	2:15 PM	11	76	0	0	83	21	0	0	0	32	56	48	327
	2:30 PM	11	90	0	0	73	41	0	0	0	32	49	42	338
	2:45 PM	9	81	0	0	79	35	0	0	0	28	62	45	339
	3:00 PM	14	70	0	0	92	29	0	0	0	21	38	37	301
	3:15 PM	9	61	0	0	83	35	0	0	0	28	61	48	325
	3:30 PM	13	88	0	0	80	34	0	0	0	19	38	27	299
	3:45 PM	10	79	0	0	101	3	0	0	0	54	58	39	344
	4:00 PM	16	93	0	1	88	1	0	0	0	28	47	39	313
	4:15 PM	15	65	0	2	60	0	0	0	0	36	66	43	287
	4:30 PM	8	84	0	0	96	6	0	0	0	29	50	30	303
4:45 PM	1	60	0	0	89	4	0	0	0	25	53	47	279	
VOLUMES	162	1,262	0	3	1,292	345	0	0	0	473	792	667	4,996	
APPROACH %	11%	89%	0%	0%	79%	21%	0%	0%	0%	24%	41%	35%		
APP/DEPART	1,424	/	1,932	1,640	/	1,765	0	/	0	1,932	/	1,299	0	
BEGIN PEAK HR	2:00 PM													
VOLUMES	41	339	0	0	325	129	0	0	0	117	219	176	1,346	
APPROACH %	11%	89%	0%	0%	72%	28%	0%	0%	0%	23%	43%	34%		
PEAK HR FACTOR	0.931			0.930			0.000			0.941			0.984	
APP/DEPART	380	/	515	454	/	442	0	/	0	512	/	389	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 28, 18 SATURDAY	LOCATION: Santa Monica	PROJECT #: SC1844	
	NORTH & SOUTH: Main	LOCATION #: 19	
	EAST & WEST: Olympic	CONTROL: SIGNAL	

NOTES: NB/EB/WB queue	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Main			Main			Olympic			Olympic			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	1	1	0	1	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	13	68	28	42	32	4	32	70	15	8	48	19	379
	1:15 PM	9	60	33	47	45	9	21	63	9	9	31	32	368
	1:30 PM	14	54	36	49	56	5	19	63	10	6	49	20	381
	1:45 PM	15	38	31	45	52	6	9	66	6	12	55	20	355
	2:00 PM	12	39	48	55	63	8	17	61	10	12	45	28	398
	2:15 PM	9	52	47	51	41	8	15	62	15	8	40	25	373
	2:30 PM	4	66	46	54	39	3	27	61	11	15	72	26	424
	2:45 PM	8	57	28	70	50	4	13	67	15	10	58	28	408
	3:00 PM	2	62	32	65	49	7	19	63	10	16	55	33	413
	3:15 PM	8	52	37	55	39	6	18	65	10	12	41	26	369
	3:30 PM	11	57	33	52	38	4	19	57	10	14	55	22	372
	3:45 PM	9	67	48	65	50	2	2	17	3	11	36	24	334
	4:00 PM	12	53	42	59	58	7	3	38	7	13	50	33	375
	4:15 PM	11	60	56	40	46	3	4	16	2	10	40	25	313
	4:30 PM	6	47	59	62	55	16	6	30	6	12	24	17	340
	4:45 PM	8	49	53	69	63	11	8	22	6	20	35	21	365
	VOLUMES	151	881	657	880	776	103	232	821	145	188	734	399	5,967
APPROACH %	9%	52%	39%	50%	44%	6%	19%	69%	12%	14%	56%	30%		
APP/DEPART	1,689	/	1,513	1,759	/	1,109	1,198	/	2,357	1,321	/	988	0	
BEGIN PEAK HR	2:15 PM													
VOLUMES	23	237	153	240	179	22	74	253	51	49	225	112	1,618	
APPROACH %	6%	57%	37%	54%	41%	5%	20%	67%	13%	13%	58%	29%		
PEAK HR FACTOR	0.890			0.889			0.955			0.854			0.954	
APP/DEPART	413	/	423	441	/	279	378	/	646	386	/	270	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sun, Jul 16, 17
SUNDAY

LOCATION: Santa Monica
NORTH & SOUTH: Main
EAST & WEST: Pico

PROJECT #: SC1406
LOCATION #: 017
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">WB queue</p>	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Main			Main			Pico			Pico			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	1	1	1	2	0	1	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	30	70	42	25	32	5	36	112	11	66	171	30	630
	1:15 PM	18	77	43	18	35	16	21	89	14	47	161	22	561
	1:30 PM	13	78	50	12	37	8	30	113	10	67	204	34	656
	1:45 PM	10	71	52	17	44	14	31	98	9	57	125	16	544
	2:00 PM	9	94	43	15	49	8	30	123	9	47	113	23	563
	2:15 PM	22	76	33	16	43	13	21	86	13	44	108	16	491
	2:30 PM	11	75	43	21	39	8	32	120	11	44	110	23	537
	2:45 PM	10	100	32	25	41	8	33	92	11	47	93	19	511
	3:00 PM	10	64	53	25	36	5	15	125	7	58	148	29	575
	3:15 PM	12	94	48	27	38	10	25	96	3	42	97	28	520
	3:30 PM	18	70	40	36	27	5	28	134	5	63	126	29	581
	3:45 PM	5	101	39	32	38	7	29	104	6	48	105	35	549
	4:00 PM	11	64	60	50	36	6	34	137	7	55	141	37	638
	4:15 PM	18	79	44	40	39	16	21	122	8	50	117	17	571
	4:30 PM	7	66	30	36	37	11	36	139	2	56	179	29	628
	4:45 PM	11	82	42	44	38	4	32	110	8	36	143	29	579
	VOLUMES	215	1,261	694	439	609	144	454	1,800	134	827	2,141	416	9,134
	APPROACH %	10%	58%	32%	37%	51%	12%	19%	75%	6%	24%	63%	12%	
	APP/DEPART	2,170	/	2,133	1,192	/	1,569	2,388	/	2,932	3,384	/	2,500	0
	BEGIN PEAK HR	4:00 PM												
	VOLUMES	47	291	176	170	150	37	123	508	25	197	580	112	2,416
	APPROACH %	9%	57%	34%	48%	42%	10%	19%	77%	4%	22%	65%	13%	
	PEAK HR FACTOR	0.911			0.939			0.921			0.842			0.947
	APP/DEPART	514	/	527	357	/	372	656	/	853	889	/	664	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 22, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: 4th EAST & WEST: Wilshire	PROJECT #: SC1406 LOCATION #: 030 CONTROL: SIGNAL
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NOTES: <div style="text-align: center; color: blue; font-weight: bold;">SB/WB queue</div>	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	1	2	0	1	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	22	30	20	29	37	11	7	128	22	31	164	36	537
	1:15 PM	15	27	17	29	37	11	3	106	41	38	151	21	496
	1:30 PM	29	34	35	26	30	8	6	107	19	41	173	32	540
	1:45 PM	15	30	29	23	35	10	8	126	25	34	142	29	506
	2:00 PM	23	22	22	18	41	2	3	134	19	27	166	28	505
	2:15 PM	8	33	20	27	34	7	2	105	25	43	161	30	495
	2:30 PM	12	29	25	23	41	12	5	128	15	37	154	36	517
	2:45 PM	11	20	24	27	33	5	7	116	15	39	168	29	494
	3:00 PM	15	18	30	32	29	5	10	122	21	39	175	28	524
	3:15 PM	12	26	24	25	47	14	3	112	24	37	130	32	486
	3:30 PM	10	21	22	26	27	7	11	111	14	34	160	23	466
	3:45 PM	5	21	20	35	44	9	3	116	26	38	167	31	515
	4:00 PM	7	20	20	29	42	7	8	115	28	36	171	21	504
	4:15 PM	16	23	24	27	39	10	11	94	22	40	153	32	491
	4:30 PM	22	25	18	29	20	6	2	108	31	44	171	36	512
4:45 PM	6	16	26	33	31	11	6	118	18	44	174	28	511	
VOLUMES	228	395	376	438	567	135	95	1,846	365	602	2,580	472	8,099	
APPROACH %	23%	40%	38%	38%	50%	12%	4%	80%	16%	16%	71%	13%		
APP/DEPART	999	/	961	1,140	/	1,534	2,306	/	2,660	3,654	/	2,944	0	
BEGIN PEAK HR	1:00 PM													
VOLUMES	81	121	101	107	139	40	24	467	107	144	630	118	2,079	
APPROACH %	27%	40%	33%	37%	49%	14%	4%	78%	18%	16%	71%	13%		
PEAK HR FACTOR	0.773			0.929			0.940			0.907			0.963	
APP/DEPART	303	/	263	286	/	390	598	/	675	892	/	751	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sun, Oct 15, 17
SUNDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Arizona

PROJECT #: SC1406
LOCATION #: 31
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER OTHER		S	
			▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	2	0	0	1	0	0	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	6	37	6	9	56	4	7	27	26	17	50	15	260
	1:15 PM	7	41	14	10	64	11	5	26	25	14	29	16	262
	1:30 PM	8	37	4	9	66	8	5	22	18	18	27	16	238
	1:45 PM	11	37	13	11	65	13	6	44	25	21	41	13	300
	2:00 PM	9	37	13	10	74	6	1	31	28	9	32	20	270
	2:15 PM	6	31	10	11	60	14	5	37	18	19	28	15	254
	2:30 PM	8	40	18	9	73	4	5	25	18	19	36	22	277
	2:45 PM	4	43	11	13	55	13	7	38	21	16	39	16	276
	3:00 PM	8	42	13	9	90	20	5	37	27	18	38	12	319
	3:15 PM	7	41	9	11	59	6	1	34	13	18	43	10	252
	3:30 PM	8	31	14	11	58	13	4	36	13	22	43	16	269
	3:45 PM	2	44	10	6	55	19	4	34	27	23	36	22	282
	4:00 PM	9	40	13	6	58	11	7	33	23	13	33	10	256
	4:15 PM	9	37	15	9	59	10	5	44	19	17	38	9	271
	4:30 PM	14	33	15	12	61	14	4	42	28	19	38	7	287
	4:45 PM	6	43	12	10	56	8	3	33	23	17	29	11	251
	VOLUMES	122	614	190	156	1,009	174	74	543	352	280	580	230	4,324
	APPROACH %	13%	66%	21%	12%	75%	13%	8%	56%	36%	26%	53%	21%	
	APP/DEPART	926	/	918	1,339	/	1,642	969	/	889	1,090	/	875	0
	BEGIN PEAK HR	2:15 PM												
VOLUMES	26	156	52	42	278	51	22	137	84	72	141	65	1,126	
APPROACH %	11%	67%	22%	11%	75%	14%	9%	56%	35%	26%	51%	23%		
PEAK HR FACTOR	0.886			0.779			0.880			0.903			0.882	
APP/DEPART	234	/	243	371	/	434	243	/	231	278	/	218	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 22, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: Santa Monica

PROJECT #: SC1406
LOCATION #: 032
CONTROL: SIGNAL

NOTES: <p style="text-align: center; color: blue;">SB/WB queue. EL/WL illegal</p>	AM PM MD OTHER OTHER	◀ W S ▶	▲ N S ▼	E ▶
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	2	0	X	1	1	X	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	8	52	20	22	102	19	0	68	36	1	99	20	447
	1:15 PM	9	55	17	25	74	19	1	76	37	2	96	20	431
	1:30 PM	10	49	6	35	69	12	0	77	30	1	66	9	364
	1:45 PM	10	54	24	17	61	21	0	70	41	0	94	19	411
	2:00 PM	5	51	17	30	84	5	0	77	37	2	90	20	418
	2:15 PM	9	47	10	26	61	7	0	84	31	1	104	26	406
	2:30 PM	4	62	19	25	76	15	0	63	43	1	91	16	415
	2:45 PM	8	51	20	27	42	10	0	70	29	0	90	20	367
	3:00 PM	11	50	21	28	102	14	0	68	41	0	60	22	417
	3:15 PM	9	48	11	22	85	13	0	80	49	0	96	19	432
	3:30 PM	5	53	21	12	101	17	0	74	49	0	75	13	420
	3:45 PM	3	36	19	14	90	9	0	74	39	1	95	25	405
	4:00 PM	11	56	22	21	82	16	1	76	35	1	88	12	421
	4:15 PM	4	48	15	27	52	10	0	96	33	2	90	16	393
	4:30 PM	11	50	13	30	71	11	0	70	43	1	74	22	396
	4:45 PM	6	44	11	30	63	8	0	75	35	2	68	11	353
VOLUMES	123	806	266	391	1,215	206	2	1,198	608	15	1,376	290	6,496	
APPROACH %	10%	67%	22%	22%	67%	11%	0%	66%	34%	1%	82%	17%		
APP/DEPART	1,195	/	1,098	1,812	/	1,838	1,808	/	1,855	1,681	/	1,705	0	
BEGIN PEAK HR	3:15 PM													
VOLUMES	28	193	73	69	358	55	1	304	172	2	354	69	1,678	
APPROACH %	10%	66%	25%	14%	74%	11%	0%	64%	36%	0%	83%	16%		
PEAK HR FACTOR	0.826			0.927			0.924			0.878			0.971	
APP/DEPART	294	/	263	482	/	532	477	/	446	425	/	437	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 22, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: 4th EAST & WEST: Broadway	PROJECT #: SC1406 LOCATION #: 033 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	2	0	X	1	1	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS		45	84	27	15	93	24	0	53	53	22	81	14	511
	1:00 PM	45	84	27	15	93	24	0	53	53	22	81	14	511
	1:15 PM	46	61	29	17	55	16	0	55	53	25	86	22	465
	1:30 PM	36	69	36	17	74	15	0	54	59	19	84	13	476
	1:45 PM	31	74	22	22	80	12	0	51	28	30	101	24	475
	2:00 PM	45	63	38	17	82	20	0	53	41	34	84	20	497
	2:15 PM	42	56	25	17	66	18	0	56	41	30	92	19	462
	2:30 PM	48	83	28	18	73	17	0	48	57	26	86	20	504
	2:45 PM	38	69	20	14	72	8	0	53	60	15	92	20	461
	3:00 PM	34	75	30	24	106	23	0	47	41	16	87	20	503
	3:15 PM	40	59	26	16	87	18	0	48	52	34	95	24	499
	3:30 PM	49	61	23	24	105	26	0	54	47	20	81	13	503
	3:45 PM	31	40	20	14	92	14	0	47	47	34	100	21	460
	4:00 PM	50	77	30	23	65	21	0	43	51	31	81	25	497
	4:15 PM	33	56	15	26	67	13	0	54	56	24	87	17	448
	4:30 PM	45	60	29	40	102	27	0	39	43	25	75	11	496
	4:45 PM	40	60	23	18	71	14	0	58	50	33	98	20	485
VOLUMES	653	1,047	421	322	1,290	286	0	813	779	418	1,410	303	7,742	
APPROACH %	31%	49%	20%	17%	68%	15%	0%	51%	49%	20%	66%	14%		
APP/DEPART	2,121	/	1,350	1,898	/	2,486	1,592	/	1,557	2,131	/	2,349	0	
BEGIN PEAK HR	2:30 PM													
VOLUMES	160	286	104	72	338	66	0	196	210	91	360	84	1,967	
APPROACH %	29%	52%	19%	15%	71%	14%	0%	48%	52%	17%	67%	16%		
PEAK HR FACTOR	0.865			0.778			0.898			0.874			0.976	
APP/DEPART	550	/	370	476	/	639	406	/	372	535	/	586	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica	PROJECT #: SC1406	
	NORTH & SOUTH: 4th	LOCATION #: 034	
	EAST & WEST: Colorado	CONTROL: SIGNAL	

NOTES:	AM		▲ N	
	PM			
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	X	X	2	0	X	X	X	0.5	1	0.5	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	49	89	0	0	144	42	0	0	0	30	44	8	406
	1:15 PM	41	127	0	0	150	29	0	0	0	33	47	8	435
	1:30 PM	54	124	0	0	137	50	0	0	0	28	44	7	444
	1:45 PM	43	126	0	0	126	42	0	0	0	28	52	8	425
	2:00 PM	32	122	0	0	132	36	0	0	0	23	38	8	391
	2:15 PM	48	81	0	0	134	52	0	0	0	29	47	3	394
	2:30 PM	53	119	0	0	162	44	0	0	0	28	44	12	462
	2:45 PM	43	97	0	0	137	47	0	0	0	27	59	8	418
	3:00 PM	53	107	0	0	124	53	0	0	0	18	38	6	399
	3:15 PM	51	116	0	0	139	51	0	0	0	20	48	4	429
	3:30 PM	43	136	0	0	133	36	0	0	0	34	36	5	423
	3:45 PM	54	154	0	0	160	27	0	0	0	29	42	9	475
	4:00 PM	37	105	0	0	173	35	0	0	0	34	40	12	436
	4:15 PM	48	105	0	0	117	23	0	0	0	20	57	9	379
	4:30 PM	47	114	0	0	126	42	0	0	0	20	35	11	395
	4:45 PM	42	114	0	0	190	28	0	0	0	24	39	10	447
	VOLUMES	738	1,836	0	0	2,284	637	0	0	0	425	710	128	6,758
	APPROACH %	29%	71%	0%	0%	78%	22%	0%	0%	0%	34%	56%	10%	
APP/DEPART	2,574	/	1,964	2,921	/	2,712	0	/	0	1,263	/	2,082	0	
BEGIN PEAK HR	3:15 PM													
VOLUMES	185	511	0	0	605	149	0	0	0	117	166	30	1,763	
APPROACH %	27%	73%	0%	0%	80%	20%	0%	0%	0%	37%	53%	10%		
PEAK HR FACTOR	0.837			0.906			0.000			0.910			0.928	
APP/DEPART	696	/	541	754	/	722	0	/	0	313	/	500	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: 4th
EAST & WEST: I-10 WB OFF-Ramp

PROJECT #: SC1406
LOCATION #: 035
CONTROL: SIGNAL

NOTES: <div style="text-align: center; color: blue; font-weight: bold;">NB/SB queue</div>	AM PM MD OTHER OTHER	◀ W S ▶	▲ N S ▼	E ▶
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			I-10 WB OFF-Ramp			I-10 WB OFF-Ramp			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	2	X	X	2	X	X	X	X	2	X	1	

INTERSECTION TURNING MOVEMENT COUNTS	TIME	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1:00 PM	0	70	0	0	164	0	0	0	0	145	0	79	458
	1:15 PM	0	93	0	0	192	0	0	0	0	147	0	76	508
	1:30 PM	1	76	0	0	158	0	0	0	0	174	0	94	503
	1:45 PM	0	96	0	0	165	0	0	0	0	181	0	80	522
	2:00 PM	1	90	0	0	146	0	0	0	0	149	0	66	452
	2:15 PM	0	60	0	0	179	0	0	0	0	125	0	60	424
	2:30 PM	0	80	0	0	186	0	0	0	0	139	0	95	500
	2:45 PM	0	71	0	0	163	0	0	0	0	103	0	71	408
	3:00 PM	0	102	0	0	152	0	0	0	0	125	0	68	447
	3:15 PM	0	86	0	0	183	0	0	0	0	132	0	77	478
	3:30 PM	0	99	0	1	149	0	0	0	0	122	0	76	447
	3:45 PM	0	121	0	0	216	0	0	0	0	114	0	89	540
	4:00 PM	0	74	0	0	193	0	0	0	0	142	0	63	472
	4:15 PM	0	88	0	1	159	0	0	0	0	90	0	61	399
	4:30 PM	0	93	0	0	142	0	0	0	0	112	0	73	420
4:45 PM	1	84	0	0	214	0	0	0	0	127	0	83	509	
VOLUMES	3	1,383	0	2	2,761	0	0	0	0	2,127	0	1,211	7,487	
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	64%	0%	36%		
APP/DEPART	1,386	/	2,596	2,763	/	4,891	0	/	0	3,338	/	0	0	
BEGIN PEAK HR	1:00 PM													
VOLUMES	1	335	0	0	679	0	0	0	0	647	0	329	1,991	
APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	66%	0%	34%		
PEAK HR FACTOR	0.875			0.884			0.000			0.910			0.954	
APP/DEPART	336	/	664	679	/	1,327	0	/	0	976	/	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica	PROJECT #: SC1406	
	NORTH & SOUTH: 4th	LOCATION #: 036	
	EAST & WEST: I-10 EB ON-Ramp	CONTROL: SIGNAL	

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	4th			4th			I-10 EB ON-Ramp			I-10 EB ON-Ramp			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	2	2	0	0.5	2	0.5	X	X	X	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	7	54	83	81	154	73	13	121	2	0	0	0	588
	1:15 PM	9	77	90	75	151	62	12	167	5	0	0	0	648
	1:30 PM	9	63	104	109	185	72	15	138	7	0	0	0	702
	1:45 PM	6	72	107	70	152	84	19	128	15	0	0	0	653
	2:00 PM	6	75	95	85	156	72	18	125	6	0	0	0	638
	2:15 PM	9	41	74	97	132	67	19	162	8	0	0	0	609
	2:30 PM	7	71	103	106	168	57	13	127	2	0	0	0	654
	2:45 PM	6	65	94	77	129	43	14	167	3	0	0	0	598
	3:00 PM	7	66	113	96	120	56	20	157	9	0	0	0	644
	3:15 PM	9	65	105	98	136	59	21	138	7	0	0	0	638
	3:30 PM	10	75	99	107	141	58	27	130	9	0	0	0	656
	3:45 PM	10	81	90	93	154	49	35	168	7	0	0	0	687
	4:00 PM	9	73	93	124	166	57	8	145	8	0	0	0	683
	4:15 PM	4	76	90	83	103	65	7	159	4	0	0	0	591
	4:30 PM	4	59	76	83	112	49	27	168	4	0	0	0	582
	4:45 PM	10	59	69	108	131	62	22	153	7	0	0	0	621
	VOLUMES	122	1,072	1,485	1,492	2,290	985	290	2,353	103	0	0	0	10,192
APPROACH %	5%	40%	55%	31%	48%	21%	11%	86%	4%	0%	0%	0%		
APP/DEPART	2,679	/	1,362	4,767	/	2,393	2,746	/	5,330	0	/	1,107	0	
BEGIN PEAK HR	3:15 PM													
VOLUMES	38	294	387	422	597	223	91	581	31	0	0	0	2,664	
APPROACH %	5%	41%	54%	34%	48%	18%	13%	83%	4%	0%	0%	0%		
PEAK HR FACTOR	0.977			0.895			0.837			0.000			0.969	
APP/DEPART	719	/	385	1,242	/	628	703	/	1,390	0	/	261	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: 5th EAST & WEST: Wilshire	PROJECT #: SC1406 LOCATION #: 038 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	1	0	1	2	0	1	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	18	27	19	9	14	2	2	136	13	18	185	25	468
	1:15 PM	32	31	26	10	21	0	4	143	19	16	212	30	544
	1:30 PM	20	29	25	7	24	2	5	151	22	18	208	23	534
	1:45 PM	24	29	24	12	19	3	10	159	16	17	214	20	547
	2:00 PM	15	45	32	9	23	3	1	162	17	20	232	25	584
	2:15 PM	18	25	26	2	21	5	7	148	14	17	203	17	503
	2:30 PM	19	32	31	15	18	4	8	139	15	25	208	20	534
	2:45 PM	22	30	19	13	22	2	0	123	19	31	231	25	537
	3:00 PM	20	22	27	8	20	3	2	154	12	27	212	23	530
	3:15 PM	14	31	23	14	24	3	4	139	16	22	229	21	540
	3:30 PM	24	22	24	12	23	3	6	151	12	35	231	16	559
	3:45 PM	29	32	24	11	23	4	6	154	19	35	196	23	556
	4:00 PM	23	30	20	10	18	2	1	143	9	39	202	23	520
	4:15 PM	29	27	22	10	22	4	5	158	17	31	208	18	551
	4:30 PM	25	23	39	14	8	1	7	159	3	27	224	22	552
	4:45 PM	30	19	27	16	14	6	2	159	10	36	200	23	542
	VOLUMES	362	454	408	172	314	47	70	2,378	233	414	3,395	354	8,601
APPROACH %	30%	37%	33%	32%	59%	9%	3%	89%	9%	10%	82%	9%		
APP/DEPART	1,224	/	872	533	/	951	2,681	/	2,968	4,163	/	3,810	0	
BEGIN PEAK HR	1:15 PM													
VOLUMES	91	134	107	38	87	8	20	615	74	71	866	98	2,209	
APPROACH %	27%	40%	32%	29%	65%	6%	3%	87%	10%	7%	84%	9%		
PEAK HR FACTOR	0.902			0.950			0.958			0.934			0.946	
APP/DEPART	332	/	250	133	/	230	709	/	762	1,035	/	967	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Santa Monica 5th Arizona	PROJECT #: LOCATION #: CONTROL:	SC1406 039 SIGNAL																				
NOTES:																								
WB queue																								
<table style="border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">AM</td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; text-align: center;">▲</td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">PM</td> <td></td> <td style="border: 1px solid black; text-align: center;">N</td> <td></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">MD</td> <td style="border: 1px solid black; text-align: center;">◀</td> <td style="border: 1px solid black; text-align: center;">W</td> <td style="border: 1px solid black; text-align: center;">▶</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">OTHER</td> <td></td> <td style="border: 1px solid black; text-align: center;">S</td> <td></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">OTHER</td> <td></td> <td style="border: 1px solid black; text-align: center;">▼</td> <td></td> </tr> </table>					AM		▲		PM		N		MD	◀	W	▶	OTHER		S		OTHER		▼	
AM		▲																						
PM		N																						
MD	◀	W	▶																					
OTHER		S																						
OTHER		▼																						

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	0	0	1	0	0	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	35	53	11	10	31	4	4	36	3	8	56	14	265
	1:15 PM	25	63	5	9	33	7	6	34	6	8	50	20	266
	1:30 PM	34	44	6	9	26	7	5	33	5	13	54	18	254
	1:45 PM	34	54	4	8	29	9	6	33	6	6	58	6	253
	2:00 PM	27	69	10	7	33	5	2	56	12	9	72	12	314
	2:15 PM	27	48	11	6	39	4	3	63	13	13	71	20	318
	2:30 PM	26	55	11	4	47	4	4	62	11	6	70	12	312
	2:45 PM	23	53	7	4	43	5	4	51	7	14	70	10	291
	3:00 PM	30	50	11	7	31	8	5	51	10	9	65	17	294
	3:15 PM	26	43	7	8	46	10	6	64	22	14	61	11	318
	3:30 PM	25	51	15	5	57	4	6	75	19	10	51	13	331
	3:45 PM	28	67	9	15	54	7	7	87	19	10	54	18	375
	4:00 PM	31	43	10	11	36	6	8	74	10	5	53	11	298
	4:15 PM	35	53	15	3	46	13	4	78	3	17	60	20	347
	4:30 PM	28	43	13	8	26	5	13	73	20	10	43	12	294
	4:45 PM	35	51	7	4	34	8	5	64	17	6	54	18	303
VOLUMES	469	840	152	118	611	106	88	934	183	158	942	232	4,833	
APPROACH %	32%	57%	10%	14%	73%	13%	7%	78%	15%	12%	71%	17%		
APP/DEPART	1,461	/	1,159	835	/	952	1,205	/	1,204	1,332	/	1,518	0	
BEGIN PEAK HR	3:30 PM													
VOLUMES	119	214	49	34	193	30	25	314	51	42	218	62	1,351	
APPROACH %	31%	56%	13%	13%	75%	12%	6%	81%	13%	13%	68%	19%		
PEAK HR FACTOR	0.918			0.845			0.863			0.830			0.901	
APP/DEPART	382	/	301	257	/	286	390	/	397	322	/	367	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Santa Monica 5th Santa Monica	PROJECT #: LOCATION #: CONTROL:	SC1406 040 SIGNAL
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NOTES: <div style="text-align: center; color: blue; font-weight: bold;">WB queue</div>	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	0	1	2	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	36	78	22	8	33	10	13	90	7	8	60	21	386
	1:15 PM	44	83	27	15	40	8	12	90	9	5	62	16	411
	1:30 PM	34	70	20	11	38	10	12	83	7	8	56	11	360
	1:45 PM	52	79	13	13	23	11	17	99	3	12	45	15	382
	2:00 PM	43	88	18	11	39	10	11	99	21	9	56	10	415
	2:15 PM	37	72	16	15	48	9	11	91	14	10	73	13	409
	2:30 PM	32	74	13	10	39	15	12	93	7	11	97	18	421
	2:45 PM	36	71	12	19	44	9	13	95	5	22	60	17	403
	3:00 PM	45	66	15	14	38	10	13	76	14	12	83	19	405
	3:15 PM	40	67	19	16	56	13	15	102	11	12	61	13	425
	3:30 PM	43	74	25	18	53	21	13	109	15	9	61	12	453
	3:45 PM	38	89	30	17	55	15	11	125	16	12	61	10	479
	4:00 PM	40	66	30	20	37	9	9	107	11	6	38	14	387
	4:15 PM	27	90	14	10	39	12	5	134	11	5	66	16	429
	4:30 PM	38	65	25	12	35	16	10	99	13	19	47	24	403
	4:45 PM	33	82	30	17	33	19	10	99	10	10	51	17	411
VOLUMES	618	1,214	329	226	650	197	187	1,591	174	170	977	246	6,579	
APPROACH %	29%	56%	15%	21%	61%	18%	10%	82%	9%	12%	70%	18%		
APP/DEPART	2,161	/	1,647	1,073	/	994	1,952	/	2,146	1,393	/	1,792	0	
BEGIN PEAK HR	3:00 PM													
VOLUMES	166	296	89	65	202	59	52	412	56	45	266	54	1,762	
APPROACH %	30%	54%	16%	20%	62%	18%	10%	79%	11%	12%	73%	15%		
PEAK HR FACTOR	0.877			0.886			0.855			0.800			0.920	
APP/DEPART	551	/	402	326	/	303	520	/	566	365	/	491	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: 5th EAST & WEST: Broadway	PROJECT #: SC1406 LOCATION #: 041 CONTROL: SIGNAL
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NOTES: <div style="text-align: center; margin-top: 10px;">WB queue</div>	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	1	0	1	1	0	1	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	Time	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1:00 PM	15	99	15	12	17	23	16	67	10	7	91	23	395
	1:15 PM	24	113	15	9	20	19	23	66	4	3	87	20	403
	1:30 PM	16	107	18	14	21	27	22	71	7	9	97	9	418
	1:45 PM	22	107	19	7	12	25	18	79	5	1	83	15	393
	2:00 PM	14	120	30	14	28	22	23	73	8	8	88	10	438
	2:15 PM	23	90	7	11	36	17	26	71	7	6	91	14	399
	2:30 PM	26	94	19	19	28	26	14	71	8	3	81	13	402
	2:45 PM	38	94	14	7	24	38	17	88	14	5	99	12	450
	3:00 PM	22	97	12	9	25	27	17	74	12	7	77	18	397
	3:15 PM	26	100	23	14	42	25	30	66	8	11	94	14	453
	3:30 PM	22	113	19	12	37	34	29	74	15	9	95	9	468
	3:45 PM	21	112	21	10	26	32	25	88	11	11	93	27	477
	4:00 PM	22	93	15	18	18	30	14	99	7	9	77	25	427
	4:15 PM	27	106	21	10	27	22	22	88	15	3	82	18	441
	4:30 PM	23	96	15	12	28	32	27	58	8	8	63	15	385
	4:45 PM	17	113	21	11	17	25	20	88	15	4	60	16	407
VOLUMES	358	1,654	284	189	406	424	343	1,221	154	104	1,358	258	6,753	
APPROACH %	16%	72%	12%	19%	40%	42%	20%	71%	9%	6%	79%	15%		
APP/DEPART	2,296	/	2,253	1,019	/	663	1,718	/	1,695	1,720	/	2,142	0	
BEGIN PEAK HR	3:15 PM													
VOLUMES	91	418	78	54	123	121	98	327	41	40	359	75	1,825	
APPROACH %	16%	71%	13%	18%	41%	41%	21%	70%	9%	8%	76%	16%		
PEAK HR FACTOR	0.953			0.898			0.940			0.905			0.956	
APP/DEPART	587	/	590	298	/	204	466	/	459	474	/	572	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

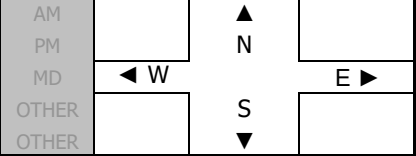
DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: 5th
EAST & WEST: Colorado

PROJECT #: SC1406
LOCATION #: 042
CONTROL: SIGNAL

NOTES:

SB/WB queue. NL illegal



LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	5th			5th			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	2	1	1	1	0	X	X	X	X	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	5	120	10	9	5	19	0	0	0	0	68	17	253
	1:15 PM	7	142	11	7	6	22	0	0	0	0	53	23	271
	1:30 PM	4	146	12	14	4	27	0	0	0	0	62	16	285
	1:45 PM	7	130	6	3	4	12	0	0	0	0	61	17	240
	2:00 PM	0	166	11	9	9	28	0	0	0	0	45	22	290
	2:15 PM	2	103	12	16	3	35	0	0	0	0	42	15	228
	2:30 PM	3	149	16	11	6	29	0	0	0	0	66	17	297
	2:45 PM	2	131	9	10	3	35	0	0	0	0	51	14	255
	3:00 PM	7	128	13	19	7	23	0	0	0	0	39	12	248
	3:15 PM	3	141	13	16	7	31	0	0	0	0	31	13	255
	3:30 PM	3	140	23	18	5	39	0	0	0	0	35	18	281
	3:45 PM	1	141	19	18	6	45	0	0	0	0	30	13	273
	4:00 PM	1	126	10	7	2	49	0	0	0	0	55	22	272
	4:15 PM	3	154	19	13	9	23	0	0	0	0	48	12	281
	4:30 PM	4	126	17	11	7	28	0	0	0	0	45	5	243
	4:45 PM	4	143	12	12	1	33	0	0	0	0	43	11	259
	VOLUMES	56	2,186	213	193	84	478	0	0	0	0	774	247	4,231
APPROACH %	2%	89%	9%	26%	11%	63%	0%	0%	0%	0%	76%	24%		
APP/DEPART	2,455	/	2,437	755	/	84	0	/	402	1,021	/	1,308	0	
BEGIN PEAK HR	3:30 PM													
VOLUMES	8	561	71	56	22	156	0	0	0	0	168	65	1,107	
APPROACH %	1%	88%	11%	24%	9%	67%	0%	0%	0%	0%	72%	28%		
PEAK HR FACTOR	0.909			0.848			0.000			0.756			0.985	
APP/DEPART	640	/	627	234	/	22	0	/	126	233	/	332	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY

LOCATION: Santa Monica
 NORTH & SOUTH: 6th
 EAST & WEST: Arizona

PROJECT #: SC1406
 LOCATION #: 044
 CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	6th			6th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	11	29	8	4	26	3	8	48	6	7	58	13	221
	1:15 PM	7	29	8	4	16	6	8	40	5	3	63	15	204
	1:30 PM	10	31	10	7	22	6	2	43	6	6	67	5	215
	1:45 PM	8	34	2	5	22	6	5	44	0	7	60	8	201
	2:00 PM	11	20	9	7	25	5	4	56	8	5	90	11	251
	2:15 PM	10	20	8	3	23	10	2	86	7	7	75	12	263
	2:30 PM	6	21	6	5	24	11	6	61	10	5	77	13	245
	2:45 PM	7	19	8	7	20	5	6	51	12	4	85	11	235
	3:00 PM	4	18	5	7	30	10	4	58	10	5	77	8	236
	3:15 PM	5	24	8	8	26	7	4	65	10	3	79	9	248
	3:30 PM	5	35	8	7	25	2	5	83	11	7	70	18	276
	3:45 PM	8	35	8	3	30	7	6	96	7	11	72	12	295
	4:00 PM	9	34	5	6	25	5	4	80	6	9	57	6	246
	4:15 PM	7	29	5	5	28	1	6	89	7	7	83	8	275
	4:30 PM	2	16	7	0	20	3	8	76	13	12	57	14	228
	4:45 PM	10	26	3	5	25	4	6	61	9	2	61	15	227
	VOLUMES	120	420	108	83	387	91	84	1,037	127	100	1,131	178	3,866
	APPROACH %	19%	65%	17%	15%	69%	16%	7%	83%	10%	7%	80%	13%	
	APP/DEPART	648	/	683	561	/	613	1,248	/	1,228	1,409	/	1,342	0
	BEGIN PEAK HR	3:30 PM												
VOLUMES	29	133	26	21	108	15	21	348	31	34	282	44	1,092	
APPROACH %	15%	71%	14%	15%	75%	10%	5%	87%	8%	9%	78%	12%		
PEAK HR FACTOR	0.922 0.900 0.917 0.918													
APP/DEPART	188	/	198	144	/	173	400	/	395	360	/	326	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY

LOCATION: Santa Monica
 NORTH & SOUTH: 6th
 EAST & WEST: Santa Monica

PROJECT #: SC1406
 LOCATION #: 045
 CONTROL: SIGNAL

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	6th			6th			Santa Monica			Santa Monica			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	1	0	1	1	0	1	2	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	5	23	10	19	18	3	7	105	15	17	78	15	315
	1:15 PM	4	20	12	20	19	5	7	105	15	7	74	16	304
	1:30 PM	9	20	5	17	22	3	7	99	5	16	71	23	297
	1:45 PM	3	17	16	16	11	2	9	107	7	14	70	7	279
	2:00 PM	8	18	11	19	17	3	4	111	13	14	62	9	289
	2:15 PM	9	18	6	15	20	4	8	107	11	11	88	13	310
	2:30 PM	7	14	7	15	22	4	5	102	6	15	104	11	312
	2:45 PM	12	12	9	19	18	6	7	107	4	11	90	12	307
	3:00 PM	5	14	7	12	28	7	4	98	9	19	106	9	318
	3:15 PM	4	15	11	13	24	6	1	126	13	17	79	18	327
	3:30 PM	4	19	5	14	15	12	3	131	12	9	68	11	303
	3:45 PM	5	27	10	16	29	2	7	163	12	11	68	10	360
	4:00 PM	3	20	8	18	18	2	7	133	13	21	63	14	320
	4:15 PM	4	18	10	16	30	5	3	142	19	10	75	13	345
	4:30 PM	4	13	11	12	28	9	3	117	13	16	80	5	311
	4:45 PM	8	20	7	12	21	8	6	122	18	18	60	9	309
	VOLUMES	94	288	145	253	340	81	88	1,875	185	226	1,236	195	5,006
	APPROACH %	18%	55%	28%	38%	50%	12%	4%	87%	9%	14%	75%	12%	
	APP/DEPART	527	/	571	674	/	747	2,148	/	2,276	1,657	/	1,412	0
	BEGIN PEAK HR	3:45 PM												
VOLUMES	16	78	39	62	105	18	20	555	57	58	286	42	1,336	
APPROACH %	12%	59%	29%	34%	57%	10%	3%	88%	9%	15%	74%	11%		
PEAK HR FACTOR	0.792 0.907 0.868 0.955													
APP/DEPART	133	/	140	185	/	219	632	/	657	386	/	320	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY

LOCATION: Santa Monica
 NORTH & SOUTH: 7th
 EAST & WEST: Arizona

PROJECT #: SC1406
 LOCATION #: 051
 CONTROL: SIGNAL

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	7th			7th			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	17	62	5	8	52	12	6	39	11	10	53	8	283
	1:15 PM	8	61	9	5	52	14	2	47	8	7	55	9	277
	1:30 PM	9	52	9	8	48	13	1	43	7	2	59	6	257
	1:45 PM	8	62	10	12	53	6	4	53	10	9	59	10	296
	2:00 PM	19	59	9	7	34	9	1	48	11	9	77	10	293
	2:15 PM	16	57	10	8	63	7	4	78	19	7	75	7	351
	2:30 PM	13	42	2	8	48	9	6	51	6	5	72	15	277
	2:45 PM	7	53	5	35	66	17	0	70	11	9	72	7	352
	3:00 PM	11	54	4	16	63	4	1	55	8	6	78	9	309
	3:15 PM	17	56	1	18	56	8	5	63	16	11	73	8	332
	3:30 PM	14	55	4	11	31	6	5	59	7	5	70	5	272
	3:45 PM	13	59	5	8	44	9	5	89	23	7	79	8	349
	4:00 PM	7	47	11	12	43	5	2	100	8	8	60	12	315
	4:15 PM	21	57	13	13	41	5	4	91	9	6	79	7	346
	4:30 PM	16	56	9	5	40	4	2	75	12	8	69	8	304
	4:45 PM	9	53	2	14	54	10	5	59	12	10	58	9	295
	VOLUMES	205	885	108	188	788	138	53	1,020	178	119	1,088	138	4,908
	APPROACH %	17%	74%	9%	17%	71%	12%	4%	82%	14%	9%	81%	10%	
APP/DEPART	1,198	/	1,076	1,114	/	1,084	1,251	/	1,317	1,345	/	1,431	0	
BEGIN PEAK HR	3:45 PM													
VOLUMES	57	219	38	38	168	23	13	355	52	29	287	35	1,314	
APPROACH %	18%	70%	12%	17%	73%	10%	3%	85%	12%	8%	82%	10%		
PEAK HR FACTOR	0.863			0.939			0.897			0.934			0.941	
APP/DEPART	314	/	267	229	/	248	420	/	432	351	/	367	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY

LOCATION: Santa Monica
 NORTH & SOUTH: 7th
 EAST & WEST: Santa Monica

PROJECT #: SC1406
 LOCATION #: 052
 CONTROL: SIGNAL

NOTES: WB queue	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼	
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	7th			7th			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	0	1	1	0	1	2	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	11	74	11	19	43	9	9	101	18	11	81	18	405
	1:15 PM	11	51	14	18	47	1	5	127	7	15	91	21	408
	1:30 PM	14	54	16	15	38	7	8	110	11	11	98	17	399
	1:45 PM	7	54	5	17	41	5	5	121	11	9	82	19	376
	2:00 PM	6	76	13	16	35	4	7	116	13	12	77	20	395
	2:15 PM	8	48	13	21	59	3	2	112	17	11	97	17	408
	2:30 PM	12	58	9	17	50	4	3	118	12	8	114	12	417
	2:45 PM	11	53	14	34	39	4	2	112	15	14	103	16	417
	3:00 PM	13	61	17	21	53	3	4	107	7	10	115	14	425
	3:15 PM	18	53	9	25	53	12	3	130	12	16	85	21	437
	3:30 PM	12	61	12	19	26	8	4	129	13	9	78	18	389
	3:45 PM	3	47	10	15	48	7	6	165	20	6	80	13	420
	4:00 PM	6	31	14	30	58	5	9	132	19	9	89	22	424
	4:15 PM	9	65	10	21	42	8	10	137	17	13	70	19	421
	4:30 PM	11	53	14	13	44	5	3	128	20	10	98	21	420
	4:45 PM	13	37	5	26	48	4	4	120	12	10	76	12	367
VOLUMES	165	876	186	327	724	89	84	1,965	224	174	1,434	280	6,528	
APPROACH %	13%	71%	15%	29%	64%	8%	4%	86%	10%	9%	76%	15%		
APP/DEPART	1,227	/	1,239	1,140	/	1,122	2,273	/	2,480	1,888	/	1,687	0	
BEGIN PEAK HR	2:30 PM													
VOLUMES	54	225	49	97	195	23	12	467	46	48	417	63	1,696	
APPROACH %	16%	69%	15%	31%	62%	7%	2%	89%	9%	9%	79%	12%		
PEAK HR FACTOR	0.901		0.875		0.905		0.950		0.950		0.950		0.970	
APP/DEPART	328	/	299	315	/	288	525	/	614	528	/	495	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Wilshire

PROJECT #: SC1406
LOCATION #: 056
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Wilshire			Wilshire			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	1	1	1	2	0	1	2	1	1	2	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	75	103	39	14	73	3	6	168	53	28	202	17	781
	1:15 PM	64	68	36	14	79	6	8	172	31	36	196	11	721
	1:30 PM	59	99	31	17	85	1	2	149	42	25	203	14	727
	1:45 PM	51	82	29	10	74	12	2	180	54	30	232	12	768
	2:00 PM	70	86	40	16	74	7	4	171	50	35	208	14	775
	2:15 PM	51	84	39	14	78	4	4	162	31	29	204	13	713
	2:30 PM	58	77	31	12	66	7	1	155	47	24	226	12	716
	2:45 PM	64	87	33	15	62	9	4	149	58	34	237	18	770
	3:00 PM	61	95	39	15	89	7	4	167	57	28	228	14	804
	3:15 PM	68	72	37	7	60	5	1	177	42	43	218	9	739
	3:30 PM	59	92	49	14	69	5	4	189	41	33	246	22	823
	3:45 PM	67	101	37	20	62	5	7	169	46	29	208	10	761
	4:00 PM	57	95	44	15	59	9	2	170	39	33	210	10	743
	4:15 PM	64	66	39	9	76	6	6	193	58	19	203	12	751
	4:30 PM	71	93	28	14	61	10	13	208	33	33	234	11	809
	4:45 PM	58	85	33	9	65	9	5	183	31	29	197	15	719
	VOLUMES	997	1,385	584	215	1,132	105	73	2,762	713	488	3,452	214	12,120
	APPROACH %	34%	47%	20%	15%	78%	7%	2%	78%	20%	12%	83%	5%	
APP/DEPART	2,966	/	1,668	1,452	/	2,333	3,548	/	3,562	4,154	/	4,557	0	
BEGIN PEAK HR	2:45 PM													
VOLUMES	252	346	158	51	280	26	13	682	198	138	929	63	3,136	
APPROACH %	33%	46%	21%	14%	78%	7%	1%	76%	22%	12%	82%	6%		
PEAK HR FACTOR	0.945			0.804			0.954			0.939			0.953	
APP/DEPART	756	/	421	357	/	616	893	/	891	1,130	/	1,208	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Lincoln EAST & WEST: Arizona	PROJECT #: SC1406 LOCATION #: 057 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Arizona			Arizona			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	0	1	0	0	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	31	200	15	5	147	7	2	24	43	13	31	9	527
	1:15 PM	29	159	13	1	135	4	1	22	34	6	33	7	444
	1:30 PM	31	148	12	1	132	2	2	29	35	7	38	7	444
	1:45 PM	43	176	21	5	172	1	3	30	31	15	36	12	545
	2:00 PM	58	186	10	4	145	4	2	43	30	13	34	7	536
	2:15 PM	56	150	13	2	129	7	3	54	37	6	30	10	497
	2:30 PM	43	169	10	5	128	7	6	38	40	6	36	7	495
	2:45 PM	45	165	9	1	136	10	7	38	51	7	36	8	513
	3:00 PM	49	171	14	5	152	8	3	40	39	11	33	11	536
	3:15 PM	52	169	13	5	127	8	4	46	31	6	25	13	499
	3:30 PM	47	181	17	2	127	3	5	58	31	11	40	8	530
	3:45 PM	41	195	18	2	119	7	5	43	62	6	36	15	549
	4:00 PM	44	170	19	5	120	5	5	35	70	8	26	7	514
	4:15 PM	42	179	11	10	146	8	2	47	51	14	44	1	555
	4:30 PM	42	182	14	6	108	5	0	47	38	6	36	8	492
	4:45 PM	47	192	11	2	119	3	3	39	33	6	40	5	500
	VOLUMES	700	2,792	220	61	2,142	89	53	633	656	141	554	135	8,176
APPROACH %	19%	75%	6%	3%	93%	4%	4%	47%	49%	17%	67%	16%		
APP/DEPART	3,712	/	2,980	2,292	/	2,940	1,342	/	914	830	/	1,342	0	
BEGIN PEAK HR	3:30 PM													
VOLUMES	174	725	65	19	512	23	17	183	214	39	146	31	2,148	
APPROACH %	18%	75%	7%	3%	92%	4%	4%	44%	52%	18%	68%	14%		
PEAK HR FACTOR	0.949			0.845			0.941			0.915			0.968	
APP/DEPART	964	/	773	554	/	765	414	/	267	216	/	343	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Lincoln EAST & WEST: Santa Monica	PROJECT #: SC1406 LOCATION #: 058 CONTROL: SIGNAL
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NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Santa Monica			Santa Monica			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	1	2	0	1	1	1	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	26	197	37	17	187	2	3	86	38	29	78	43	743
	1:15 PM	39	169	20	17	161	5	5	104	47	20	89	37	713
	1:30 PM	25	176	32	18	164	6	4	99	32	24	90	36	706
	1:45 PM	29	187	29	26	171	3	3	96	44	30	84	49	751
	2:00 PM	25	201	29	37	152	7	6	94	39	40	76	44	750
	2:15 PM	39	176	33	19	156	7	7	102	39	34	80	48	740
	2:30 PM	21	186	20	19	152	9	5	105	35	27	91	24	694
	2:45 PM	38	184	37	37	161	7	8	103	50	32	103	39	799
	3:00 PM	33	206	28	39	134	5	4	86	46	25	101	39	746
	3:15 PM	45	190	29	50	144	9	2	120	45	12	77	51	774
	3:30 PM	40	187	21	42	127	6	9	114	37	22	61	41	707
	3:45 PM	21	212	18	24	163	5	8	123	63	31	79	41	788
	4:00 PM	37	198	29	40	158	4	4	100	65	25	80	40	780
	4:15 PM	33	195	27	49	139	6	5	128	45	27	75	23	752
	4:30 PM	35	200	22	42	119	15	8	118	31	29	85	46	750
	4:45 PM	31	199	19	34	120	7	5	109	37	34	67	39	701
	VOLUMES	517	3,063	430	510	2,408	103	86	1,687	693	441	1,316	640	11,894
APPROACH %	13%	76%	11%	17%	80%	3%	3%	68%	28%	18%	55%	27%		
APP/DEPART	4,010	/	3,789	3,021	/	3,541	2,466	/	2,628	2,397	/	1,936	0	
BEGIN PEAK HR	3:45 PM													
VOLUMES	126	805	96	155	579	30	25	469	204	112	319	150	3,070	
APPROACH %	12%	78%	9%	20%	76%	4%	4%	67%	29%	19%	55%	26%		
PEAK HR FACTOR	0.973			0.946			0.899			0.908			0.974	
APP/DEPART	1,027	/	980	764	/	895	698	/	720	581	/	475	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Sat, Jul 15, 17
SATURDAY

LOCATION: Santa Monica
NORTH & SOUTH: Lincoln
EAST & WEST: Broadway

PROJECT #: SC1406
LOCATION #: 059
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Broadway			Broadway			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	1	1	1	1	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	29	215	26	9	223	11	12	65	42	21	58	17	728
	1:15 PM	51	226	27	15	191	19	13	53	47	32	67	17	758
	1:30 PM	46	238	25	14	229	9	9	52	63	33	55	13	786
	1:45 PM	31	231	23	11	194	14	13	63	46	28	55	19	728
	2:00 PM	37	272	25	11	234	15	15	54	51	36	52	23	825
	2:15 PM	45	225	28	15	198	7	12	63	40	25	54	16	728
	2:30 PM	53	241	19	11	159	8	14	58	61	26	47	20	717
	2:45 PM	45	229	29	25	185	9	15	46	33	23	55	20	714
	3:00 PM	50	253	31	7	225	13	11	50	51	24	47	20	782
	3:15 PM	38	238	23	7	227	13	16	49	70	24	66	18	789
	3:30 PM	36	241	17	13	182	17	11	60	71	30	52	25	755
	3:45 PM	39	236	30	18	134	9	17	50	61	24	37	14	669
	4:00 PM	51	251	24	22	199	11	14	69	31	16	43	19	750
	4:15 PM	24	257	17	15	206	10	12	67	53	27	29	26	743
	4:30 PM	43	198	39	10	233	16	11	57	35	24	61	24	751
4:45 PM	27	200	28	7	205	11	16	56	46	33	50	19	698	
VOLUMES	645	3,751	411	210	3,224	192	211	912	801	426	828	310	11,921	
APPROACH %	13%	78%	9%	6%	89%	5%	11%	47%	42%	27%	53%	20%		
APP/DEPART	4,807	/	4,270	3,626	/	4,452	1,924	/	1,534	1,564	/	1,665	0	
BEGIN PEAK HR	1:15 PM													
VOLUMES	165	967	100	51	848	57	50	222	207	129	229	72	3,097	
APPROACH %	13%	78%	8%	5%	89%	6%	10%	46%	43%	30%	53%	17%		
PEAK HR FACTOR	0.922		0.919		0.966		0.927		0.927		0.927		0.938	
APP/DEPART	1,232	/	1,089	956	/	1,185	479	/	373	430	/	450	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Santa Monica Lincoln Colorado	PROJECT #: LOCATION #: CONTROL:	SC1406 060 SIGNAL
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NOTES: EL/WL illegal	AM PM MD OTHER OTHER	◀ W	▲ N S ▼	E ▶
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	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			Colorado			Colorado			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	2	0	X	1	0	X	1	0	

INTERSECTION TURNING MOVEMENT COUNTS	Time	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1:00 PM	34	296	16	9	276	12	0	20	50	0	28	28	769
	1:15 PM	47	255	14	6	278	5	0	16	30	0	45	27	723
	1:30 PM	47	265	9	4	297	3	1	21	40	0	52	19	758
	1:45 PM	38	276	15	0	273	4	0	18	41	0	40	17	722
	2:00 PM	49	282	6	2	273	8	0	11	32	1	35	19	718
	2:15 PM	31	282	11	4	295	3	0	22	56	0	39	14	757
	2:30 PM	41	264	6	4	269	3	0	14	41	1	32	20	695
	2:45 PM	42	285	8	2	270	5	1	20	31	0	41	17	722
	3:00 PM	35	285	8	6	229	9	0	21	38	1	34	29	695
	3:15 PM	27	268	10	8	263	9	0	11	63	0	22	28	709
	3:30 PM	49	292	14	4	224	8	0	22	60	1	23	22	719
	3:45 PM	19	301	9	4	281	8	0	30	34	0	23	18	727
	4:00 PM	33	311	17	3	294	4	0	25	40	0	36	21	784
	4:15 PM	23	237	10	4	256	6	0	22	50	0	63	21	692
	4:30 PM	31	293	9	1	194	4	0	25	48	0	32	29	666
	4:45 PM	34	265	14	3	225	3	0	23	44	0	16	21	648
VOLUMES	580	4,457	176	64	4,197	94	2	321	698	4	561	350	11,504	
APPROACH %	11%	85%	3%	1%	96%	2%	0%	31%	68%	0%	61%	38%		
APP/DEPART	5,213	/	4,809	4,355	/	4,899	1,021	/	561	915	/	1,235	0	
BEGIN PEAK HR	1:00 PM													
VOLUMES	166	1,092	54	19	1,124	24	1	75	161	0	165	91	2,972	
APPROACH %	13%	83%	4%	2%	96%	2%	0%	32%	68%	0%	64%	36%		
PEAK HR FACTOR	0.948													
APP/DEPART	1,312	/	1,184	1,167	/	1,285	237	/	148	256	/	355	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Lincoln EAST & WEST: I-10 WB OFF-Ramp	PROJECT #: SC1406 LOCATION #: 061 CONTROL: SIGNAL
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NOTES: NB/SB queue	AM PM MD OTHER OTHER	◀ W	▲ N S ▼	E ▶
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			I-10 WB OFF-Ramp			I-10 WB OFF-Ramp			
	NL 1	NT 2	NR X	SL X	ST 3	SR 0	EL X	ET X	ER X	WL 1.5	WT 1	WR 1.5	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	56	169	0	0	318	9	0	0	0	206	139	181	1,078
	1:15 PM	72	163	0	0	330	13	0	0	0	192	117	172	1,059
	1:30 PM	77	170	0	0	314	16	0	0	0	192	104	185	1,058
	1:45 PM	74	137	0	0	318	16	0	0	0	168	117	162	992
	2:00 PM	66	153	0	0	306	12	0	0	0	204	127	217	1,085
	2:15 PM	77	153	0	0	361	9	0	0	0	166	106	168	1,040
	2:30 PM	69	150	0	0	309	7	0	0	0	176	103	167	981
	2:45 PM	75	175	0	0	313	8	0	0	0	156	123	179	1,029
	3:00 PM	79	164	0	0	309	8	0	0	0	192	127	189	1,068
	3:15 PM	76	145	0	0	293	9	0	0	0	181	122	174	1,000
	3:30 PM	71	159	0	0	327	5	0	0	0	191	143	201	1,097
	3:45 PM	85	197	0	0	303	16	0	0	0	157	107	140	1,005
	4:00 PM	75	176	0	0	343	16	0	0	0	184	145	191	1,130
	4:15 PM	85	134	0	0	350	11	0	0	0	168	152	166	1,066
	4:30 PM	79	162	0	0	255	15	0	0	0	222	145	196	1,074
	4:45 PM	94	139	0	0	311	24	0	0	0	176	109	150	1,003
	VOLUMES	1,210	2,546	0	0	5,060	194	0	0	0	2,931	1,986	2,838	16,765
APPROACH %	32%	68%	0%	0%	96%	4%	0%	0%	0%	38%	26%	37%		
APP/DEPART	3,756	/	5,384	5,254	/	7,991	0	/	0	7,755	/	3,390	0	
BEGIN PEAK HR	3:30 PM													
VOLUMES	316	666	0	0	1,323	48	0	0	0	700	547	698	4,298	
APPROACH %	32%	68%	0%	0%	96%	4%	0%	0%	0%	36%	28%	36%		
PEAK HR FACTOR	0.871			0.949			0.000			0.909			0.951	
APP/DEPART	982	/	1,364	1,371	/	2,023	0	/	0	1,945	/	911	0	

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Sat, Jul 15, 17 SATURDAY	LOCATION: Santa Monica NORTH & SOUTH: Lincoln EAST & WEST: I-10 EB ON-Ramp	PROJECT #: SC1406 LOCATION #: 062 CONTROL: SIGNAL
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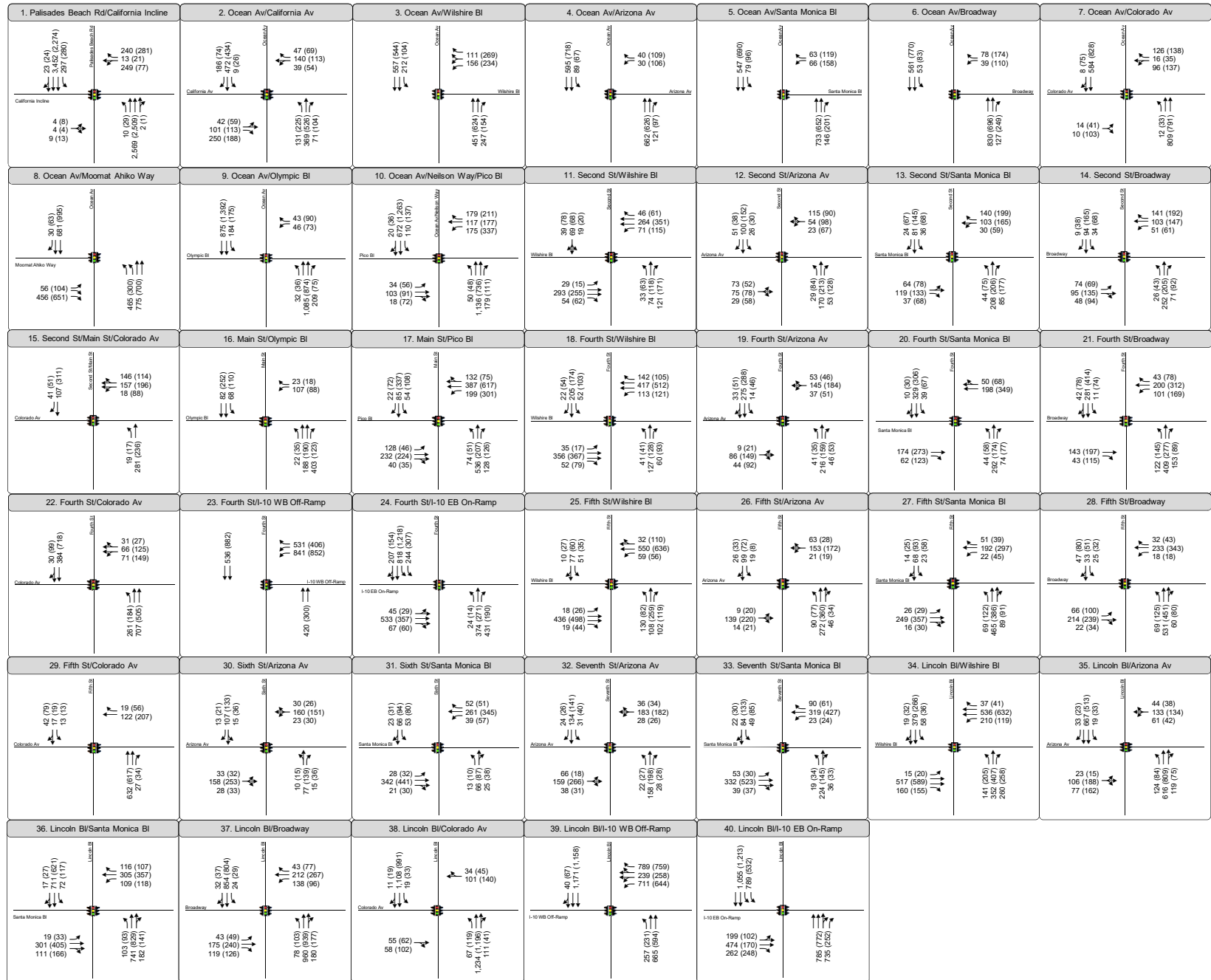
NOTES: NB/SB queue	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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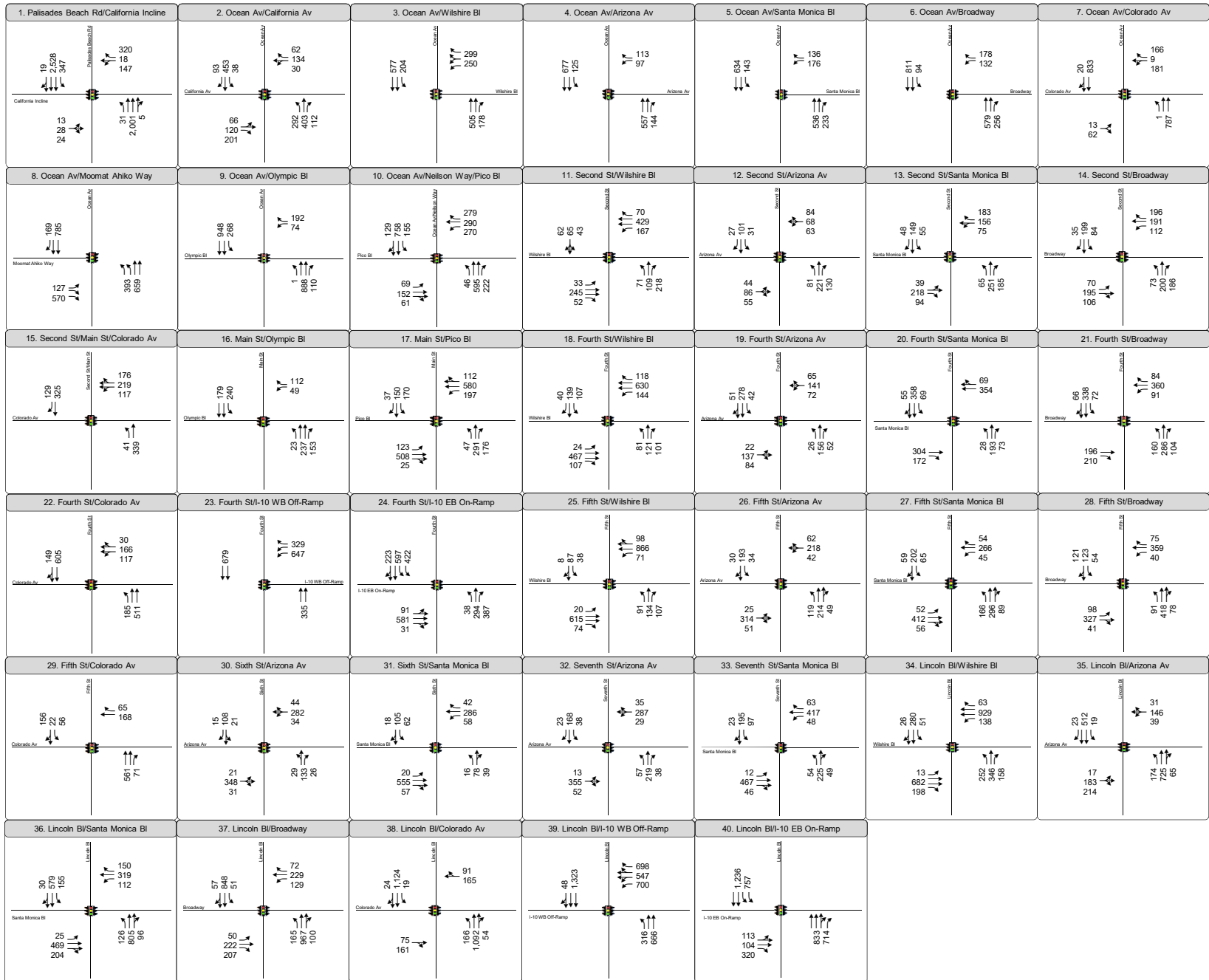
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Lincoln			Lincoln			I-10 EB ON-Ramp			I-10 EB ON-Ramp			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	2.5	1.5	2	2	X	0.5	1.5	1	X	X	X	

INTERSECTION TURNING MOVEMENT COUNTS	1:00 PM	0	214	146	189	336	0	12	19	57	0	0	0	973
	1:15 PM	0	211	143	186	337	0	25	29	63	0	0	0	994
	1:30 PM	0	219	164	170	336	0	31	27	70	0	0	0	1,017
	1:45 PM	0	181	162	185	302	0	31	35	103	0	0	0	999
	2:00 PM	0	195	141	170	341	0	25	17	71	0	0	0	960
	2:15 PM	0	197	154	209	326	0	34	22	98	0	0	0	1,040
	2:30 PM	0	200	229	187	299	0	20	34	74	0	0	0	1,043
	2:45 PM	0	210	158	181	289	0	41	26	87	0	0	0	992
	3:00 PM	0	226	173	180	322	0	18	22	61	0	0	0	1,002
	3:15 PM	0	202	209	177	298	0	20	27	84	0	0	0	1,017
	3:30 PM	0	212	135	182	337	0	19	18	70	0	0	0	973
	3:45 PM	0	247	131	162	299	0	36	28	82	0	0	0	985
	4:00 PM	0	233	165	186	342	0	19	24	57	0	0	0	1,026
	4:15 PM	0	197	144	170	349	0	23	19	59	0	0	0	961
	4:30 PM	0	212	161	157	321	0	30	17	84	0	0	0	982
4:45 PM	0	200	161	158	329	0	34	24	78	0	0	0	984	
VOLUMES	0	3,356	2,576	2,849	5,163	0	418	388	1,198	0	0	0	15,948	
APPROACH %	0%	57%	43%	36%	64%	0%	21%	19%	60%	0%	0%	0%		
APP/DEPART	5,932	/	3,774	8,012	/	6,361	2,004	/	5,813	0	/	0	0	
BEGIN PEAK HR	2:15 PM													
VOLUMES	0	833	714	757	1,236	0	113	104	320	0	0	0	4,077	
APPROACH %	0%	54%	46%	38%	62%	0%	21%	19%	60%	0%	0%	0%		
PEAK HR FACTOR	0.902			0.931			0.872			0.000			0.977	
APP/DEPART	1,547	/	946	1,993	/	1,556	537	/	1,575	0	/	0	0	

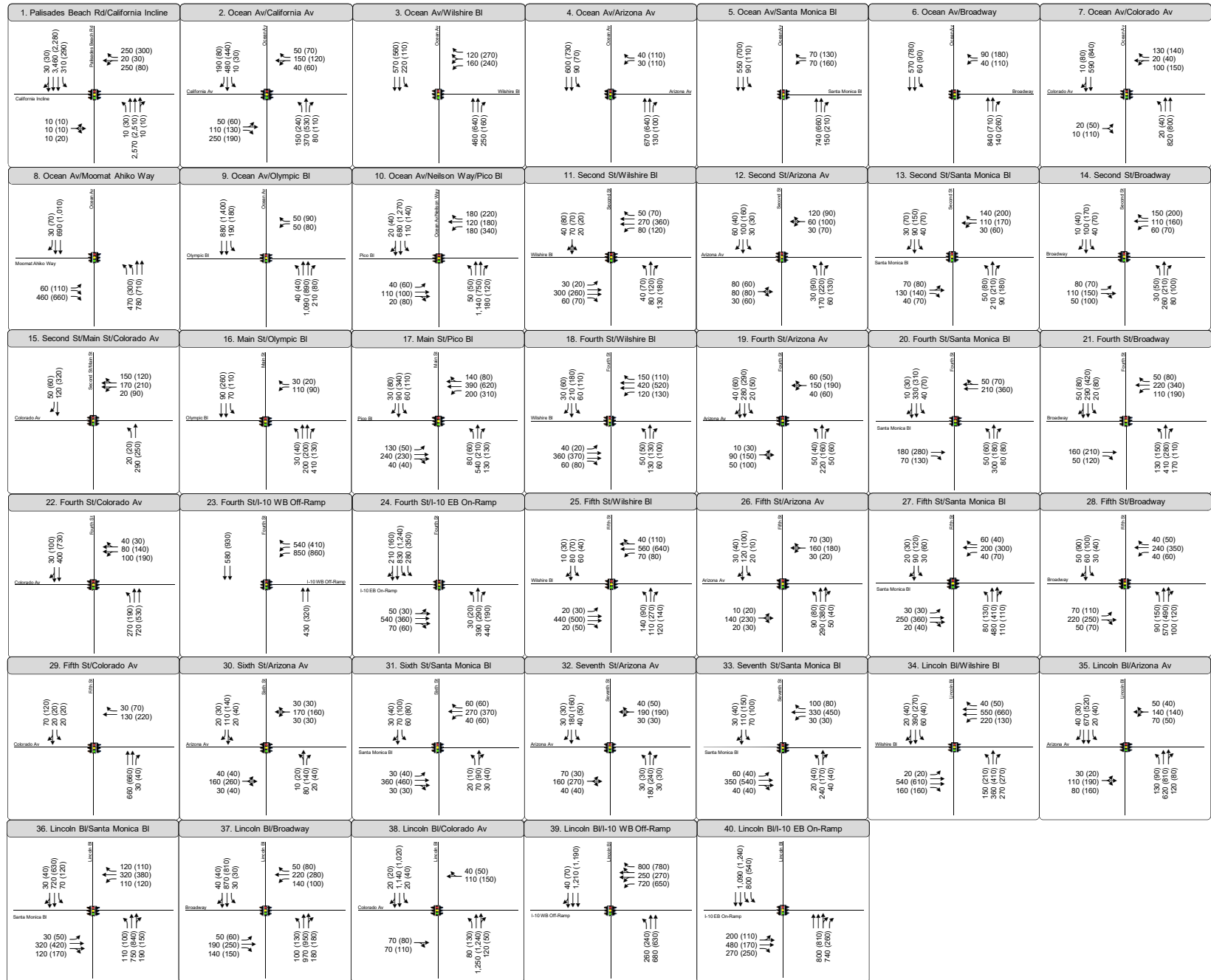
**APPENDIX B1:
STUDY INTERSECTION LANE CONFIGURATION
AND TRAFFIC VOLUMES**

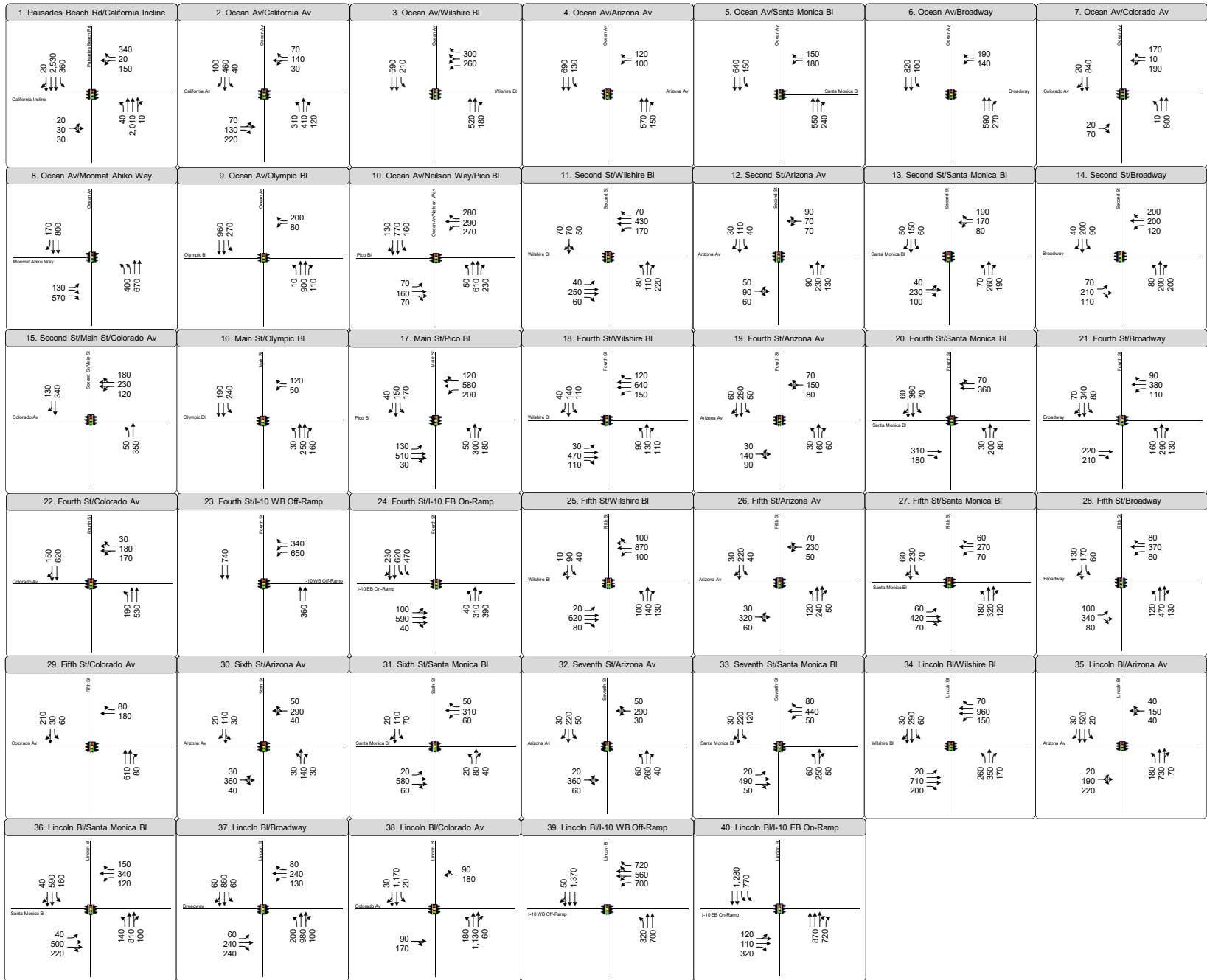
EXISTING CONDITIONS



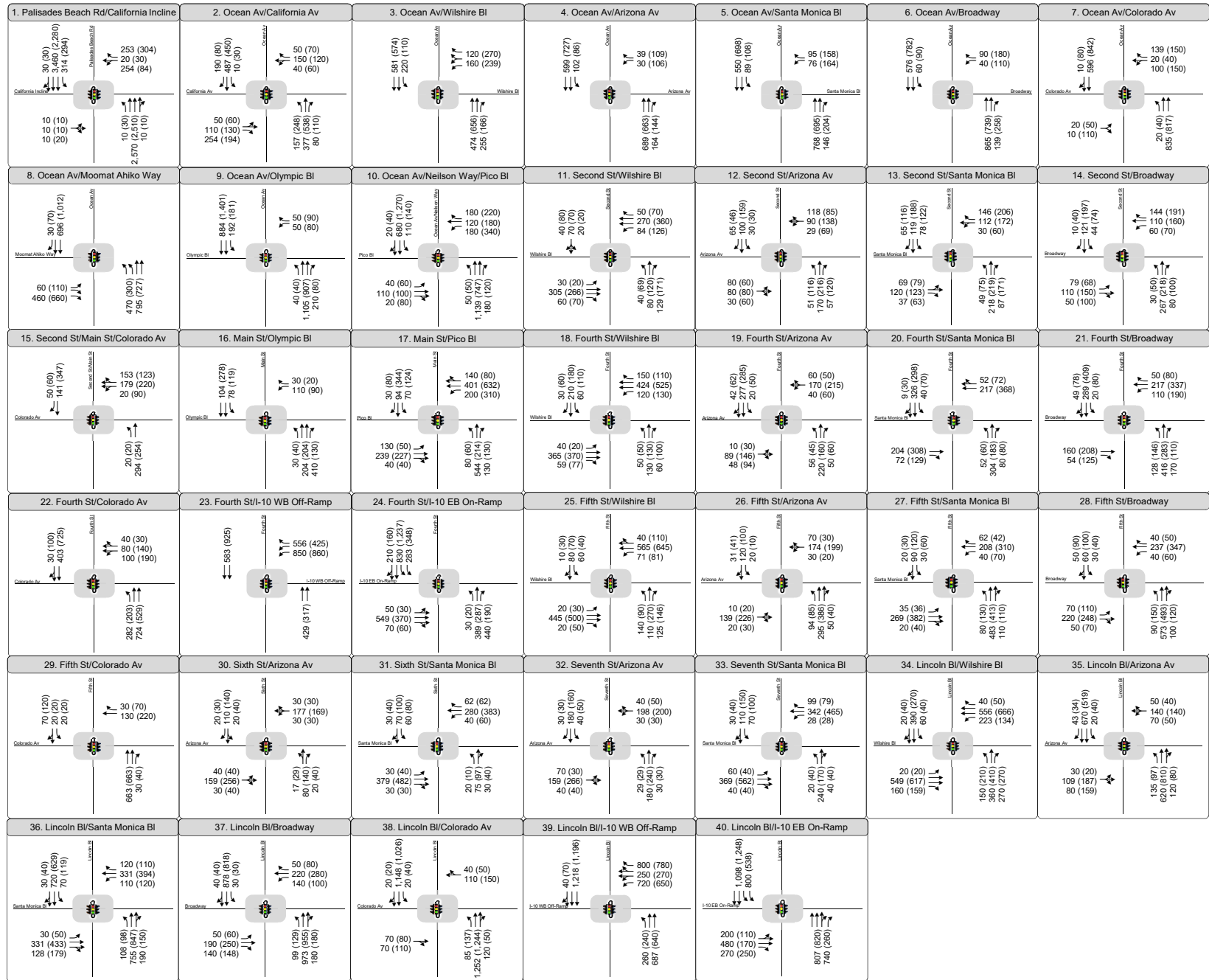


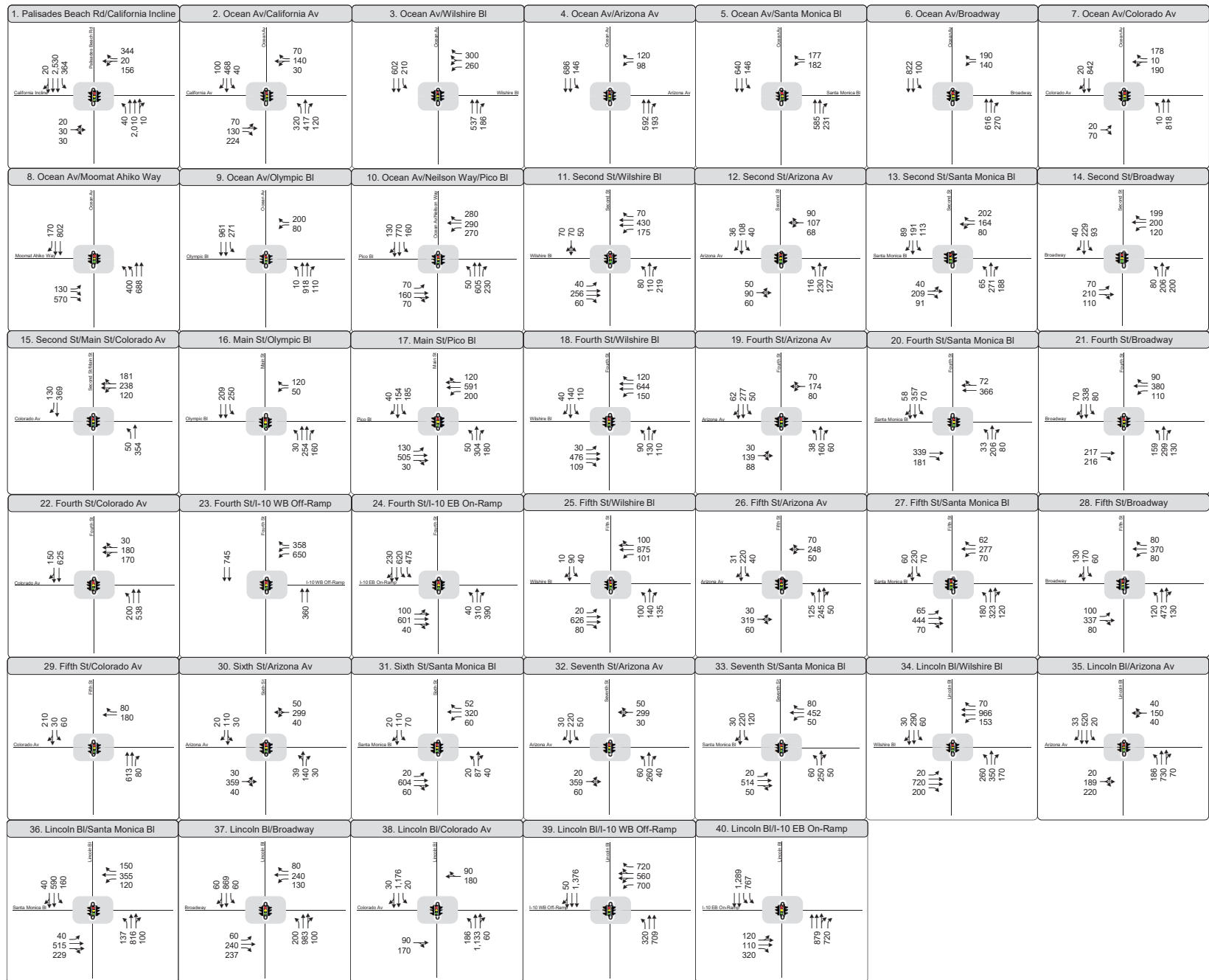
APPROVAL YEAR (2020) NO PROJECT CONDITIONS



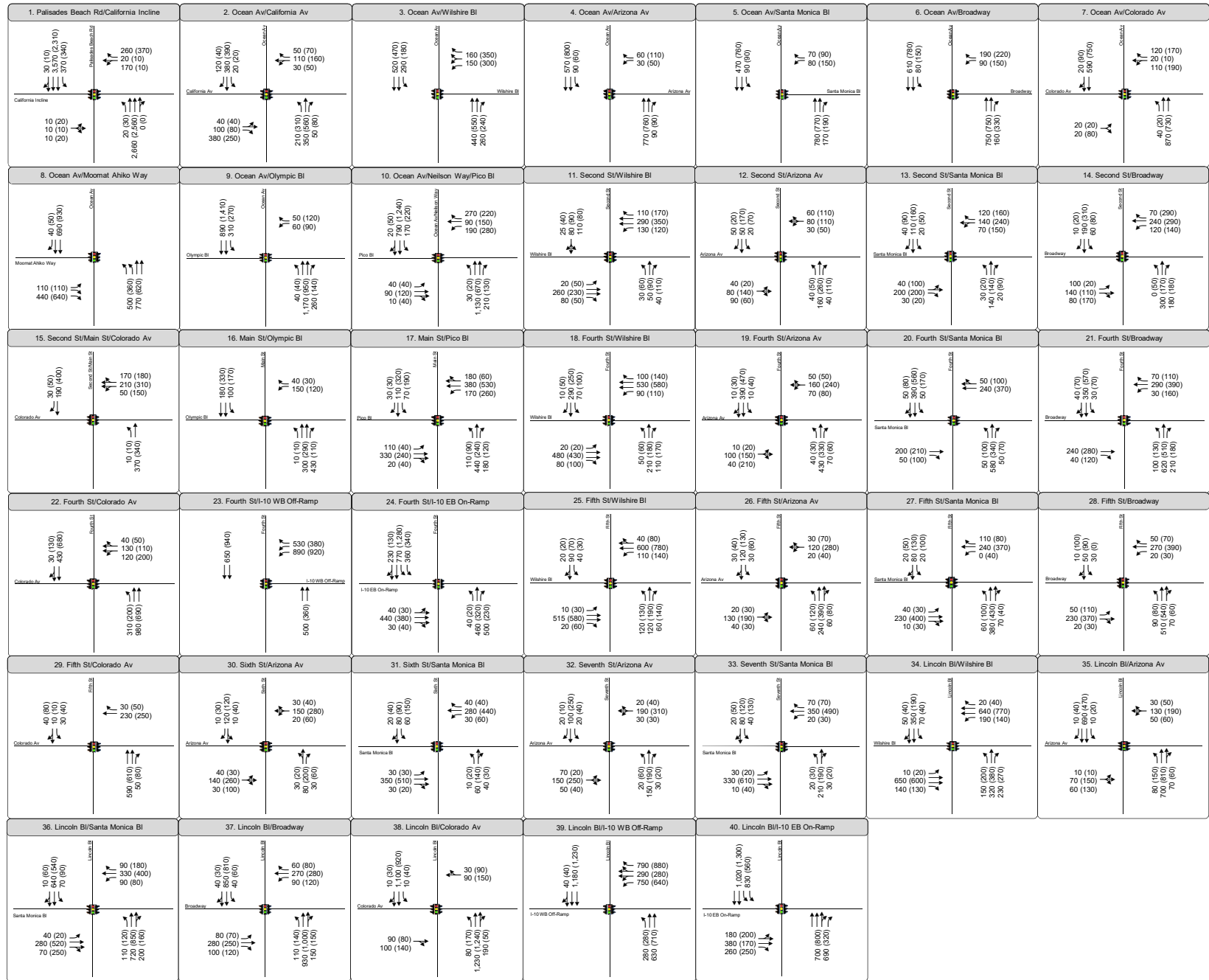


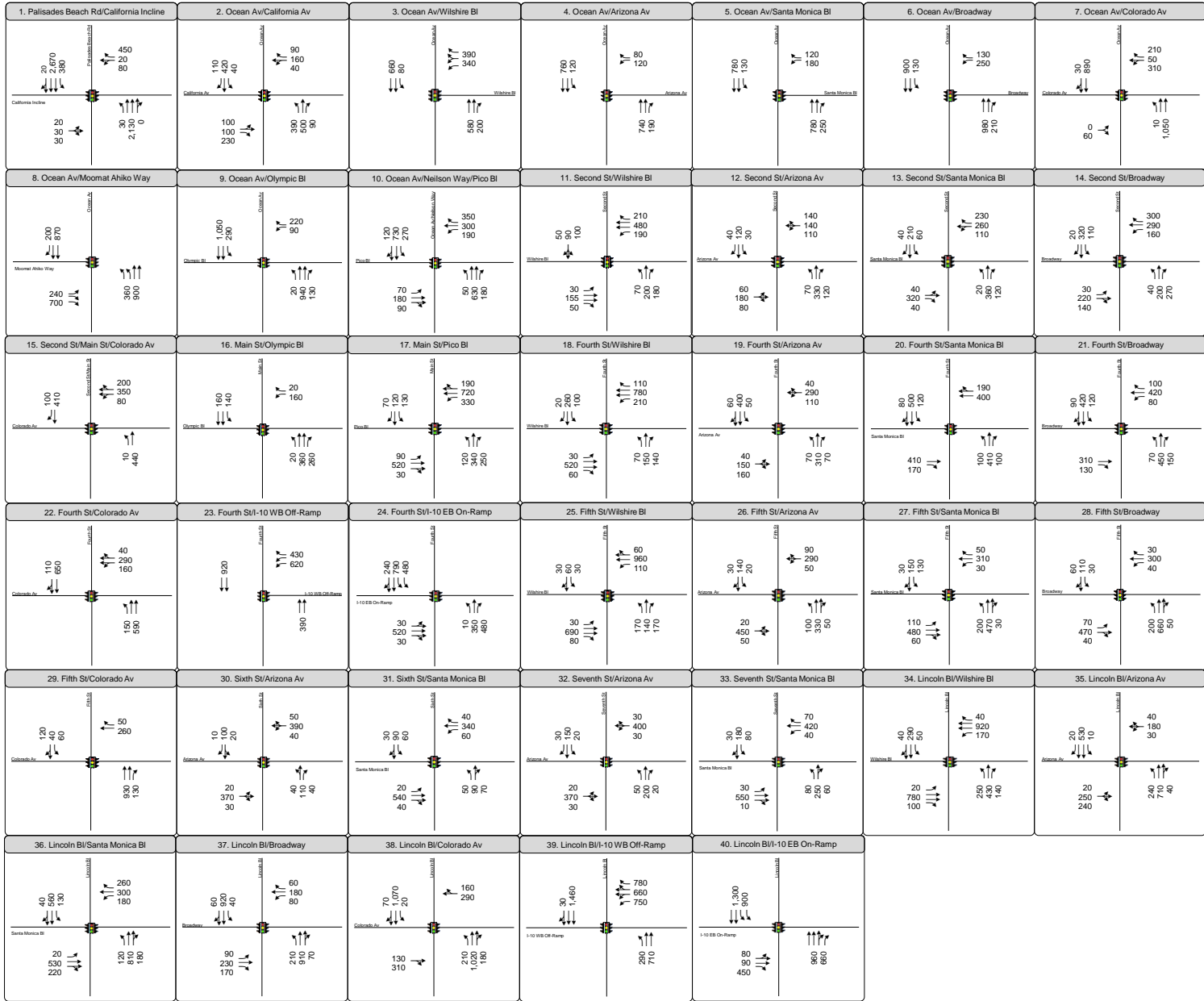
APPROVAL YEAR (2020) PLUS PROJECT CONDITIONS



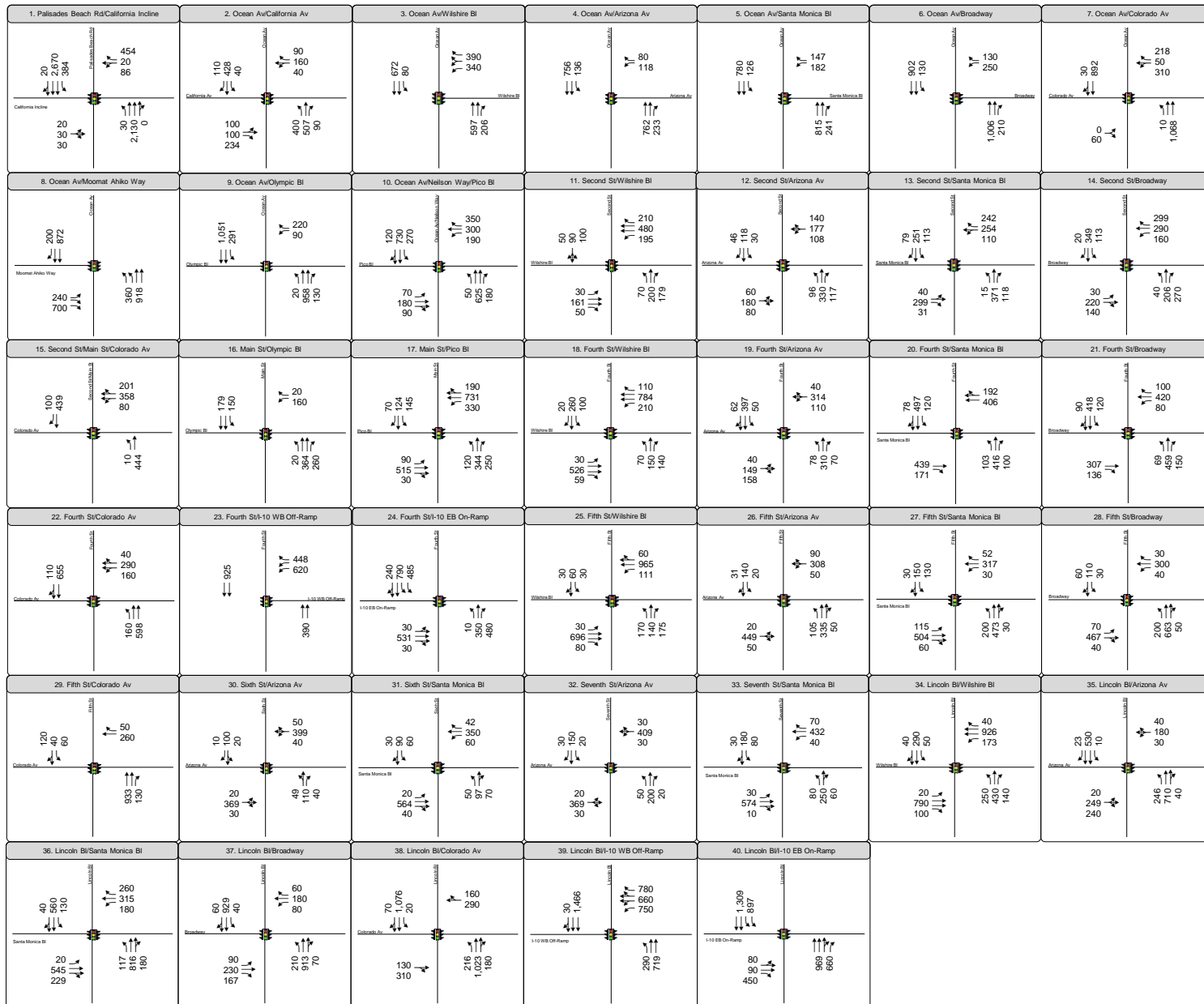


FUTURE (2025) NO PROJECT CONDITIONS





FUTURE (2025) PLUS PROJECT CONDITIONS



**APPENDIX B2:
STUDY INTERSECTION LEVEL OF SERVICE WORKSHEETS**

EXISTING CONDITIONS

Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 76.6
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.347

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	10	2569	2	297	3452	23	4	4	9	249	13	240
Base Volume Input [veh/h]	10	2569	2	297	3452	23	4	4	9	249	13	240
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	2569	2	297	3452	23	4	4	9	249	13	240
Peak Hour Factor	0.8779	0.8779	1.0000	0.9383	0.9383	0.9383	0.8500	0.8500	0.8500	0.9161	0.9161	0.9161
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	732	1	79	920	6	1	1	3	68	4	65
Total Analysis Volume [veh/h]	11	2926	2	317	3679	25	5	5	11	272	14	262
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	6	25	0	6	25	0	6	6	0	0	6	6	
Maximum Green [s]	15	142	0	60	187	0	38	38	0	0	38	38	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	2.0	2.0	
Split [s]	15	142	0	60	187	0	40	40	0	0	40	40	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	5	5	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	13	13	0	0	10	10	
Rest in Walk	No	No		No	No		No	No		No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	3.2	3.2	
Minimum Recall	No	Yes		No	Yes		No	No		No	No	No	
Maximum Recall	No	No		No	No		No	No		No	No	No	
Pedestrian Recall	No	No		No	Yes		No	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	240	240	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	5.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	3.20	0.00
g_i, Effective Green Time [s]	3	145	44	186	186	36	35	84
g / C, Green / Cycle	0.01	0.61	0.18	0.78	0.78	0.15	0.15	0.35
(v / s)_i Volume / Saturation Flow Rate	0.01	0.57	0.18	0.67	0.67	0.07	0.61	0.16
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1893	302	471	1594
c, Capacity [veh/h]	24	3132	334	2808	1470	64	98	560
d1, Uniform Delay [s]	117.59	43.07	96.81	18.30	18.43	89.80	108.03	60.49
k, delay calibration	0.04	0.50	0.20	0.50	0.50	0.04	0.50	0.46
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	6.67	21.23	3.86	7.18	1.11	895.58	2.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

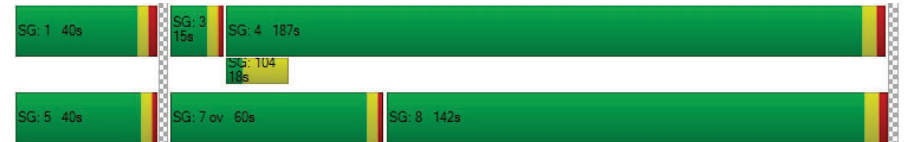
X, volume / capacity	0.46	0.93	0.95	0.86	0.87	0.33	2.93	0.47
d, Delay for Lane Group [s/veh]	122.72	49.74	118.04	22.16	25.61	90.91	1003.61	63.08
Lane Group LOS	F	D	F	C	C	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.72	52.99	21.50	43.42	47.27	1.16	30.53	13.14
50th-Percentile Queue Length [ft/ln]	18.07	1324.85	537.60	1085.50	1181.81	29.12	763.35	328.48
95th-Percentile Queue Length [veh/ln]	1.30	64.93	29.11	54.23	58.55	2.10	50.27	19.08
95th-Percentile Queue Length [ft/ln]	32.52	1623.31	727.73	1355.67	1463.70	52.41	1256.87	477.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	122.72	49.74	0.00	118.04	23.33	25.61	90.91	90.91	90.91	1003.61	1003.61	63.08
Movement LOS	F	D		F	C	C	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	50.02			30.81			90.91			553.94		
Approach LOS	D			C			F			F		
d_I, Intersection Delay [s/veh]	76.56											
Intersection LOS	E											
Intersection V/C	1.347											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 53.5
Level Of Service: D
Volume to Capacity (v/c): 0.798

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration	T T			T T			T T			T T			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Base Volume Input [veh/h]	131	369	71	9	472	186	42	101	250	0	39	140	47
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	131	369	71	9	472	186	42	101	250	0	39	140	47
Peak Hour Factor	0.8497	0.8497	0.8497	0.9162	0.9162	0.9162	0.8326	0.8326	0.8326	1.0000	0.941	0.941	0.941
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	109	21	2	129	51	13	30	75	0	10	37	12
Total Analysis Volume [veh/h]	154	434	84	10	515	203	50	121	300	0	41	149	50
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	32			62			86			124			
Bicycle Volume [bicycles/h]	1			14			14			39			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	77.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	63	63	1	54	54	18	37	18	18
g / C, Green / Cycle	0.10	0.63	0.63	0.01	0.54	0.54	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.09	0.23	0.06	0.01	0.27	0.14	0.37	0.19	0.35	0.04
s, saturation flow rate [veh/h]	1810	1900	1425	1810	1900	1441	460	1542	547	1212
c, Capacity [veh/h]	185	1187	890	23	1017	771	131	575	145	224
d1, Uniform Delay [s]	44.05	9.11	7.47	49.01	14.81	12.56	39.63	24.42	39.07	34.67
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.50	0.13	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.72	0.87	0.21	4.95	1.80	0.83	180.30	0.88	181.46	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

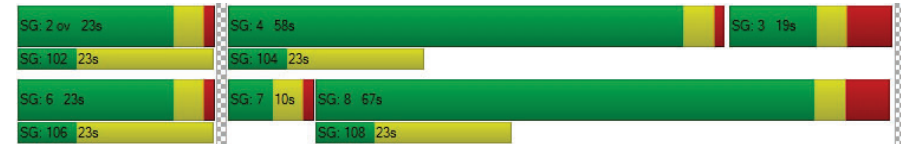
X, volume / capacity	0.83	0.37	0.09	0.44	0.51	0.26	1.30	0.52	1.31	0.22
d, Delay for Lane Group [s/veh]	47.77	9.98	7.68	53.97	16.61	13.39	219.92	25.30	220.53	34.86
Lane Group LOS	D	A	A	D	B	B	F	C	F	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.90	4.52	0.72	0.28	7.58	2.54	9.88	5.64	10.86	1.03
50th-Percentile Queue Length [ft/ln]	97.58	112.92	18.08	6.95	189.59	63.61	246.96	141.07	271.53	25.77
95th-Percentile Queue Length [veh/ln]	7.03	8.00	1.30	0.50	12.10	4.58	16.76	9.54	18.22	1.86
95th-Percentile Queue Length [ft/ln]	175.64	200.06	32.55	12.51	302.50	114.49	419.08	238.46	455.52	46.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.77	9.98	7.68	53.97	16.61	13.39	219.92	219.92	25.30	220.5	220.5	220.5	34.86
Movement LOS	D	A	A	D	B	B	F	F	C	F	F	F	C
d_A, Approach Delay [s/veh]	18.35		16.22			95.96			181.84				
Approach LOS	B		B			F			F				
d_I, Intersection Delay [s/veh]	53.52												
Intersection LOS	D												
Intersection V/C	0.798												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 12.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.291

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	451	247	212	557	156	111
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	451	247	212	557	156	111
Peak Hour Factor	0.9089	0.9089	0.8739	0.8739	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	124	68	61	159	44	31
Total Analysis Volume [veh/h]	496	272	243	637	175	125
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31		38		61	
Bicycle Volume [bicycles/h]	1		2		18	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	61	61	73	73	14	14	14
g / C, Green / Cycle	0.61	0.61	0.73	0.73	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.24	0.18	0.06	0.06	0.07
s, saturation flow rate [veh/h]	3618	1548	1034	3618	1690	1746	1428
c, Capacity [veh/h]	2211	946	800	2631	238	245	201
d1, Uniform Delay [s]	8.76	9.17	4.58	4.51	39.35	39.19	39.54
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.77	0.98	0.22	0.48	0.41	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

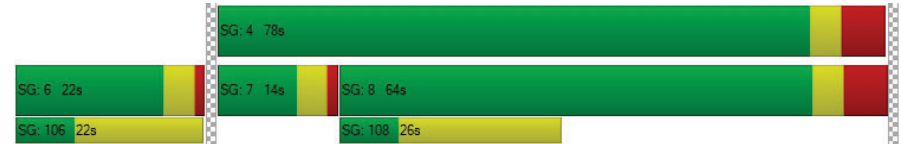
X, volume / capacity	0.22	0.29	0.30	0.24	0.44	0.41	0.47
d, Delay for Lane Group [s/veh]	8.99	9.94	5.56	4.73	39.83	39.60	40.18
Lane Group LOS	A	A	A	A	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.35	2.81	1.53	1.89	2.36	2.28	2.16
50th-Percentile Queue Length [ft/ln]	58.63	70.27	38.30	47.26	59.12	57.04	54.01
95th-Percentile Queue Length [veh/ln]	4.22	5.06	2.76	3.40	4.26	4.11	3.89
95th-Percentile Queue Length [ft/ln]	105.53	126.49	68.94	85.07	106.41	102.68	97.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.99	9.94	5.56	4.73	39.73	40.06
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	9.33		4.96		39.86	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	12.06					
Intersection LOS	B					
Intersection VIC	0.291					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 6.9
Level Of Service: A
Volume to Capacity (v/c): 0.253

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	662	121	89	595	30	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	662	121	89	595	30	40
Peak Hour Factor	0.9190	0.9190	0.9144	0.9144	0.7609	0.7609
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	180	33	24	163	10	13
Total Analysis Volume [veh/h]	720	132	97	651	39	53
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34		38		77	
Bicycle Volume [bicycles/h]	3		4		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	73	73	73	73	14
g / C, Green / Cycle	0.73	0.73	0.73	0.73	0.14
(v / s)_i Volume / Saturation Flow Rate	0.20	0.09	0.13	0.18	0.05
s, saturation flow rate [veh/h]	3618	1496	739	3618	1692
c, Capacity [veh/h]	2627	1086	539	2627	240
d1, Uniform Delay [s]	4.68	4.11	7.76	4.57	38.89
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.23	0.73	0.23	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

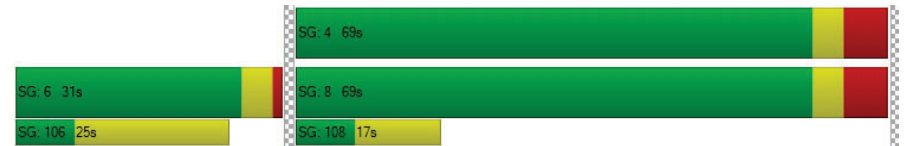
X, volume / capacity	0.27	0.12	0.18	0.25	0.38
d, Delay for Lane Group [s/veh]	4.94	4.34	8.49	4.80	39.27
Lane Group LOS	A	A	A	A	D
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.22	0.75	0.93	1.96	2.04
50th-Percentile Queue Length [ft/ln]	55.38	18.81	23.15	48.88	51.00
95th-Percentile Queue Length [veh/ln]	3.99	1.35	1.67	3.52	3.67
95th-Percentile Queue Length [ft/ln]	99.68	33.85	41.67	87.99	91.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.94	4.34	8.49	4.80	39.27	39.27
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	4.85		5.28		39.27	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	6.91					
Intersection LOS	A					
Intersection V/C	0.253					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.295

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	733	146	79	547	66	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	733	146	79	547	66	63
Peak Hour Factor	0.9233	0.9233	0.9315	0.9315	0.7866	0.7866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	198	40	21	147	21	20
Total Analysis Volume [veh/h]	794	158	85	587	84	80
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	78		64		77	
Bicycle Volume [bicycles/h]	5		4		17	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	68	68	79	79	8	19
g / C, Green / Cycle	0.68	0.68	0.79	0.79	0.08	0.19
(v / s)_i Volume / Saturation Flow Rate	0.22	0.11	0.10	0.16	0.06	0.06
s, saturation flow rate [veh/h]	3618	1489	821	3618	1378	1409
c, Capacity [veh/h]	2454	1010	689	2850	110	267
d1, Uniform Delay [s]	6.62	5.78	2.87	2.69	45.03	34.80
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.33	0.37	0.16	4.01	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.16	0.12	0.21	0.76	0.30
d, Delay for Lane Group [s/veh]	6.97	6.11	3.24	2.85	49.05	35.03
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.19	1.16	0.34	1.12	2.15	1.68
50th-Percentile Queue Length [ft/ln]	79.83	29.02	8.46	27.93	53.76	42.05
95th-Percentile Queue Length [veh/ln]	5.75	2.09	0.61	2.01	3.87	3.03
95th-Percentile Queue Length [ft/ln]	143.69	52.23	15.22	50.28	96.77	75.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.97	6.11	3.24	2.85	49.05	35.03
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	6.83		2.90		42.21	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.60					
Intersection LOS	A					
Intersection V/C	0.295					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.357

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	12	809	142	67	584	8	14	13	10	96	16	126
Base Volume Input [veh/h]	12	809	142	67	584	8	14	13	10	96	16	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	809	142	67	584	8	14	13	10	96	16	126
Peak Hour Factor	0.9547	0.9547	0.8613	0.9469	0.9024	0.9024	0.6667	0.5455	0.6667	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	212	41	18	162	2	5	6	4	28	5	37
Total Analysis Volume [veh/h]	13	847	165	71	647	9	21	24	15	113	19	148
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			17		
Bicycle Volume [bicycles/h]	20			23			24			47		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	41.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	51	0	0	39	27	17	0	39	12	25	17
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	66	66	60	60	5	14	14
g / C, Green / Cycle	0.55	0.55	0.50	0.50	0.04	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.17	0.17	0.02	0.07	0.10
s, saturation flow rate [veh/h]	858	3618	1900	1889	1723	1822	1454
c, Capacity [veh/h]	473	1988	943	937	71	217	174
d1, Uniform Delay [s]	13.03	15.91	18.42	18.45	56.37	50.20	51.84
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.67	1.02	1.03	2.08	1.02	4.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

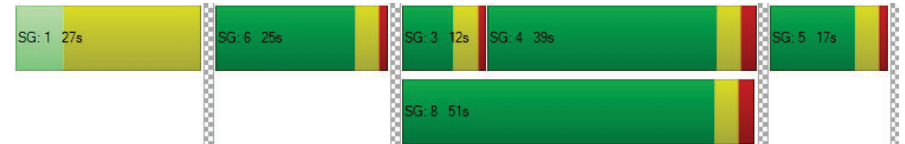
X, volume / capacity	0.03	0.43	0.35	0.35	0.51	0.61	0.85
d, Delay for Lane Group [s/veh]	13.04	16.58	19.44	19.48	58.45	51.22	56.36
Lane Group LOS	B	B	B	B	E	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.16	6.89	5.78	5.79	1.10	3.86	4.62
50th-Percentile Queue Length [ft/ln]	4.00	172.25	144.39	144.63	27.56	96.57	115.48
95th-Percentile Queue Length [veh/ln]	0.29	11.19	9.72	9.73	1.98	6.95	8.14
95th-Percentile Queue Length [ft/ln]	7.20	279.87	242.93	243.25	49.61	173.83	203.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.04	16.58	0.00	0.00	19.46	19.48	58.45	0.00	58.45	51.22	51.22	56.36
Movement LOS	B	B			B	B	E		E	D	D	E
d_A, Approach Delay [s/veh]	16.53		19.46			58.45		53.94				
Approach LOS	B		B			E		D				
d_I, Intersection Delay [s/veh]	24.12											
Intersection LOS	C											
Intersection V/C	0.357											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 24.6
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.436

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	TTT		TT		TTT	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	465	775	681	30	56	456
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	465	775	681	30	56	456
Peak Hour Factor	0.9091	0.9091	0.9306	0.9306	0.8533	0.8533
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	128	213	183	8	16	134
Total Analysis Volume [veh/h]	512	853	732	32	66	534
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		0		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	71	71	71	25	24
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	81	81	81	6	30
g / C, Green / Cycle	0.16	0.67	0.67	0.67	0.05	0.25
(v / s)_i Volume / Saturation Flow Rate	0.15	0.24	0.20	0.02	0.04	0.20
s, saturation flow rate [veh/h]	3514	3618	3618	1615	1810	2667
c, Capacity [veh/h]	565	2430	2430	1085	95	671
d1, Uniform Delay [s]	49.44	8.45	8.10	6.59	55.87	42.00
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.35	0.40	0.32	0.05	3.39	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

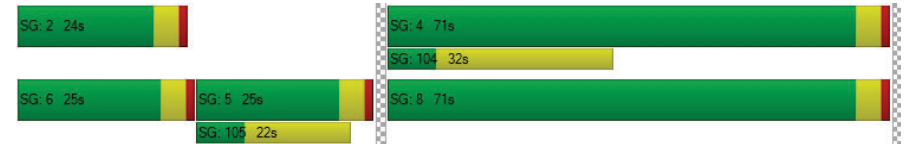
X, volume / capacity	0.91	0.35	0.30	0.03	0.70	0.80
d, Delay for Lane Group [s/veh]	51.79	8.85	8.42	6.64	59.26	42.83
Lane Group LOS	D	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.70	4.63	3.80	0.28	2.15	7.89
50th-Percentile Queue Length [ft/ln]	192.48	115.64	94.99	6.95	53.68	197.29
95th-Percentile Queue Length [veh/ln]	12.25	8.15	6.84	0.50	3.87	12.50
95th-Percentile Queue Length [ft/ln]	306.25	203.82	170.98	12.50	96.63	312.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.79	8.85	8.42	6.64	59.26	42.83
Movement LOS	D	A	A	A	E	D
d_A, Approach Delay [s/veh]	24.96		8.34		44.64	
Approach LOS	C		A		D	
d_I, Intersection Delay [s/veh]	24.63					
Intersection LOS	C					
Intersection V/C	0.436					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 20.1
Level Of Service: C
Volume to Capacity (v/c): 0.489

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Northbound				Northeastbound				Southwestbound			
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Base Volume Input [veh/h]	0	0	0	0	34	103	18	3	175	98	117
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	34	103	18	3	175	98	117	179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.9268	0.9268	0.9268	1.0000	0.9489	0.9471	0.9471	0.9471
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	9	28	5	1	46	26	31	47
Total Analysis Volume [veh/h]	0	0	0	0	37	111	19	3	184	103	124	189
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	12				27				48			
Bicycle Volume [bicycles/h]	10				7				36			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	15	30	30	0	7	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	19	35	43	0	12	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	22	13	0	0	0	20	0
Rest in Walk	-	-	-	-	-	No	-	-	-	-	No	-
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall	-	-	-	-	-	No	-	-	-	-	No	-
Maximum Recall	-	-	-	-	-	No	-	-	-	-	No	-
Pedestrian Recall	-	-	-	-	-	No	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	31	31	31
g / C, Green / Cycle	0.21	0.21	0.21	0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.04	0.13	0.07	0.12
s, saturation flow rate [veh/h]	1259	1900	1766	1450	1900	1517
c, Capacity [veh/h]	263	403	375	586	656	524
d1, Uniform Delay [s]	33.88	28.95	29.01	21.52	20.64	22.04
k, delay calibration	0.11	0.11	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.19	0.22	1.40	0.14	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.16	0.17	0.31	0.19	0.36
d, Delay for Lane Group [s/veh]	34.12	29.13	29.22	22.92	20.78	22.46
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.71	1.15	1.13	2.95	1.79	2.93
50th-Percentile Queue Length [ft/ln]	17.86	28.69	28.34	73.65	44.64	73.14
95th-Percentile Queue Length [veh/ln]	1.29	2.07	2.04	5.30	3.21	5.27
95th-Percentile Queue Length [ft/ln]	32.14	51.65	51.00	132.57	80.35	131.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	34.12	29.17	29.22	0.00	22.92	0.00	20.78	22.46
Movement LOS					C	C	C		C		C	C
d_A, Approach Delay [s/veh]	0.00				30.27			22.21				
Approach LOS	A				C			C				
d_I, Intersection Delay [s/veh]	20.15											
Intersection LOS	C											
Intersection V/C	0.489											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	1136	179	110	672	65	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	1136	179	110	672	65	20
Peak Hour Factor	1.0000	0.9525	0.9525	0.9525	0.9353	0.9353	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	298	47	29	180	17	5
Total Analysis Volume [veh/h]	1	52	1193	188	118	719	69	21
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	46				31			
Bicycle Volume [bicycles/h]	10				12			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	30	30	15	30	0	30
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	24	35	19	43	0	35
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	22	0	13	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			Yes		No	Yes		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	50	50	50
g / C, Green / Cycle	0.45	0.45	0.45	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.07	0.33	0.12	0.17	0.20	0.20
s, saturation flow rate [veh/h]	727	3618	1537	676	1900	1874
c, Capacity [veh/h]	306	1620	688	360	1050	1035
d1, Uniform Delay [s]	23.08	20.50	15.65	14.35	11.22	11.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.20	3.03	0.98	2.42	0.94	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

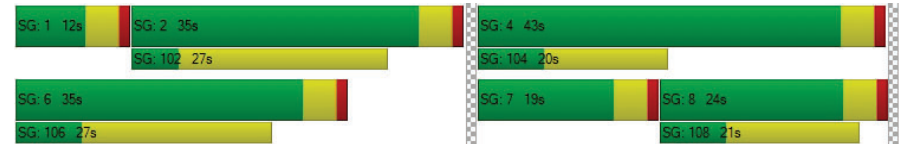
X, volume / capacity	0.17	0.74	0.27	0.33	0.35	0.36
d, Delay for Lane Group [s/veh]	24.28	23.53	16.63	16.77	12.16	12.19
Lane Group LOS	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.91	10.39	2.52	1.29	4.11	4.08
50th-Percentile Queue Length [ft/ln]	22.64	259.77	63.10	32.25	102.79	101.97
95th-Percentile Queue Length [veh/ln]	1.63	15.68	4.54	2.32	7.40	7.34
95th-Percentile Queue Length [ft/ln]	40.76	391.94	113.58	58.05	185.01	183.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.28	23.53	16.63	16.77	12.17	0.00	12.19
Movement LOS		C	C	B	B	B		B
d_A, Approach Delay [s/veh]		22.65			12.80			
Approach LOS		C			B			
d_I, Intersection Delay [s/veh]		20.15						
Intersection LOS		C						
Intersection V/C		0.489						

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 30.0
 Level Of Service: C
 Volume to Capacity (v/c): 0.328

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	33	74	121	0	19	69	39	0	29	293	54	0	71	264	46
Base Volume Input [veh/h]	0	33	74	121	0	19	69	39	0	29	293	54	0	71	264	46
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	33	74	121	0	19	69	39	0	29	293	54	0	71	264	46
Peak Hour Factor	1.000	0.924	0.924	0.924	1.000	0.803	0.803	0.803	1.000	0.662	0.662	0.662	1.000	0.962	0.962	0.962
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	20	33	0	6	21	12	0	11	111	20	0	18	69	12
Total Analysis Volume [veh/h]	0	36	80	131	0	24	86	49	0	44	442	81	0	74	274	48
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	307				0				6				14			
Bicycle Volume [bicycles/h]	1				8				9				31			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.12	0.21	0.04	0.12	0.05	0.08	0.09	0.09
s, saturation flow rate [veh/h]	1274	1697	771	1075	3618	1589	962	1900	1776
c, Capacity [veh/h]	74	263	153	498	1709	751	432	898	839
d1, Uniform Delay [s]	50.01	40.77	42.49	19.02	15.86	14.67	21.25	15.23	15.28
k, delay calibration	0.04	0.04	0.13	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.86	2.16	46.79	0.35	0.37	0.29	0.86	0.45	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.80	1.04	0.09	0.26	0.11	0.17	0.18	0.19
d, Delay for Lane Group [s/veh]	51.88	42.94	89.27	19.37	16.22	14.96	22.11	15.68	15.78
Lane Group LOS	D	D	F	B	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.93	5.07	5.78	0.69	3.05	1.06	1.26	2.22	2.16
50th-Percentile Queue Length [ft/ln]	23.16	126.71	144.38	17.13	76.13	26.58	31.62	55.42	53.94
95th-Percentile Queue Length [veh/ln]	1.67	8.76	9.86	1.23	5.48	1.91	2.28	3.99	3.88
95th-Percentile Queue Length [ft/ln]	41.68	219.02	246.59	30.83	137.04	47.85	56.92	99.76	97.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.88	51.88	42.94	42.94	89.27	89.27	89.27	89.27	19.37	19.37	16.22	14.96	22.11	22.11	15.72	15.78
Movement LOS	D	D	D	D	F	F	F	F	B	B	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	44.24				89.27				16.29				16.92			
Approach LOS	D				F				B				B			
d_I, Intersection Delay [s/veh]	29.99															
Intersection LOS	C															
Intersection V/C	0.328															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.5
Level Of Service: C
Volume to Capacity (v/c): 0.308

Intersection Setup

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Base Volume Input [veh/h]	0	29	170	53	0	26	100	51	0	73	75	29	0	23	54
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	29	170	53	0	26	100	51	0	73	75	29	0	23	54	115
Peak Hour Factor	1.000	0.828	0.828	0.828	1.000	0.834	0.834	0.834	1.000	0.885	0.885	0.885	1.000	0.872	0.872	0.872
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	51	16	0	8	30	15	0	21	21	8	0	7	15	33
Total Analysis Volume [veh/h]	0	35	205	64	0	31	120	61	0	82	85	33	0	26	62	132
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	257				0				18				7			
Bicycle Volume [bicycles/h]	11				5				23				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	0	0	0	4	4	0	2	2	2	0	0	6	0	
Auxiliary Signal Groups																	
Lead / Lag	-	Lag	-	-	-	-	-	-	-	Lag	-	-	-	-	-	-	
Minimum Green [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0	
Maximum Green [s]	0	30	30	0	0	0	30	30	0	30	30	30	0	0	30	0	
Amber [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	3.6	0.0	
All red [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0	
Split [s]	0	35	35	0	0	0	35	35	0	38	38	38	0	0	38	0	
Vehicle Extension [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	
Walk [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0	
Pedestrian Clearance [s]	0	13	13	0	0	0	13	13	0	16	16	16	0	0	16	0	
Rest in Walk																	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	
I2, Clearance Lost Time [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	2.6	2.6	2.6	0.0	0.0	2.6	0.0	
Minimum Recall			Yes				Yes			No					No		
Maximum Recall							No			No					No		
Pedestrian Recall			No				No			No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	17	17	17	17	17	53	53
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.04	0.03	0.10	0.14	0.20
s, saturation flow rate [veh/h]	1222	1900	1544	1196	1772	1387	1100
c, Capacity [veh/h]	134	326	265	126	304	781	619
d1, Uniform Delay [s]	46.37	38.47	35.81	46.83	38.23	13.12	14.02
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.75	0.17	0.38	0.70	0.79	1.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

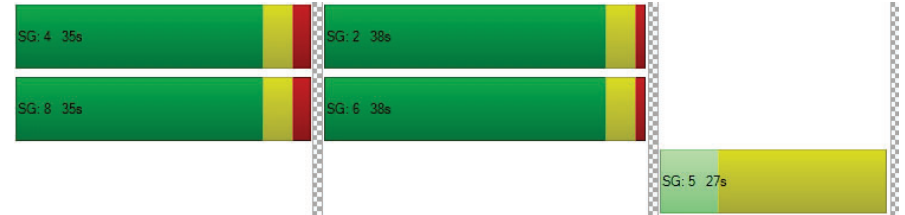
X, volume / capacity	0.26	0.63	0.24	0.25	0.60	0.26	0.36
d, Delay for Lane Group [s/veh]	46.75	39.22	35.98	47.20	38.92	13.91	15.61
Lane Group LOS	D	D	D	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.85	4.64	1.34	0.76	4.07	2.56	3.10
50th-Percentile Queue Length [ft/ln]	21.28	115.89	33.50	18.94	101.65	64.10	77.62
95th-Percentile Queue Length [veh/ln]	1.53	8.17	2.41	1.36	7.32	4.62	5.59
95th-Percentile Queue Length [ft/ln]	38.30	204.17	60.30	34.10	182.97	115.38	139.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.75	46.75	39.22	35.98	47.20	47.20	38.92	38.92	13.91	13.91	13.91	13.91	15.61	15.61	15.61	15.61
Movement LOS	D	D	D	D	D	D	D	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	39.41				40.14				13.91				15.61			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	28.53															
Intersection LOS	C															
Intersection V/C	0.308															

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 29.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.360

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	44	208	85	36	81	24	64	119	37	30	103	140
Base Volume Input [veh/h]	44	208	85	36	81	24	64	119	37	30	103	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	208	85	36	81	24	64	119	37	30	103	140
Peak Hour Factor	0.8868	0.8868	0.8868	0.7663	0.7663	0.7663	0.9649	0.9649	0.9649	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	59	24	12	26	8	17	31	10	8	28	38
Total Analysis Volume [veh/h]	50	235	96	47	106	31	66	123	38	33	113	154
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	425			0			24			8		
Bicycle Volume [bicycles/h]	3			6			42			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	83.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.04	0.12	0.11	0.04	0.08	0.24	0.02	0.16	0.10
s, saturation flow rate [veh/h]	1272	1900	900	1163	1812	799	1566	895	1584
c, Capacity [veh/h]	205	365	173	137	348	452	792	497	801
d1, Uniform Delay [s]	41.75	37.24	36.53	46.41	35.30	22.25	12.51	16.62	13.53
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	0.71	1.04	0.55	0.27	2.82	0.11	1.50	0.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

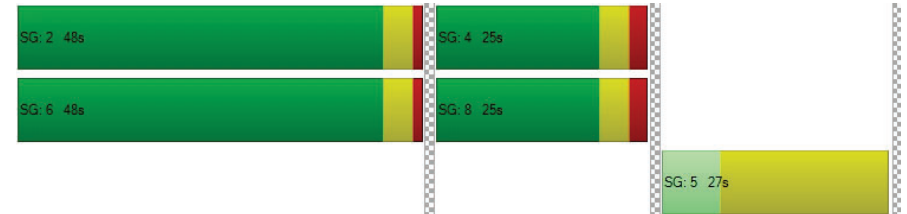
X, volume / capacity	0.24	0.64	0.56	0.34	0.39	0.42	0.05	0.29	0.19
d, Delay for Lane Group [s/veh]	41.98	37.95	37.57	46.95	35.57	25.07	12.63	18.12	14.06
Lane Group LOS	D	D	D	D	D	C	B	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.14	5.25	2.12	1.15	2.89	4.21	0.45	1.93	1.97
50th-Percentile Queue Length [ft/ln]	28.61	131.22	53.11	28.78	72.17	105.35	11.21	48.15	49.32
95th-Percentile Queue Length [veh/ln]	2.06	9.01	3.82	2.07	5.20	7.58	0.81	3.47	3.55
95th-Percentile Queue Length [ft/ln]	51.50	225.16	95.59	51.80	129.91	189.51	20.18	86.66	88.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.98	37.95	37.57	46.95	35.57	35.57	25.07	25.07	12.63	18.12	18.12	14.06
Movement LOS	D	D	D	D	D	D	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	38.39			38.48			22.99			16.04		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	29.06											
Intersection LOS	C											
Intersection V/C	0.360											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.8
Level Of Service: C
Volume to Capacity (v/c): 0.341

Intersection Setup

Name	2nd St				2nd St				Broadway				Br			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Broadway				Br			
	Base Volume Input [veh/h]	0	74	95	48	0	51	103	141	0	34	94	9	0	26	252
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	74	95	48	0	51	103	141	0	34	94	9	0	26	252	71
Peak Hour Factor	1.000	0.863	0.863	0.863	1.000	0.856	0.856	0.856	1.000	0.889	0.889	0.889	1.000	0.776	0.776	0.776
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	21	27	14	0	15	30	41	0	10	26	3	0	8	81	23
Total Analysis Volume [veh/h]	0	86	110	56	0	60	120	165	0	38	106	10	0	33	325	91
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	466				0				17				14			
Bicycle Volume [bicycles/h]	14				37				53				22			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	80.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	2	8	2	0	6	4	6	0	4	2	4	0	8	6	8	
Auxiliary Signal Groups	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7	
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30	
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	
All red [s]	0.0	1.0	2.0	1.0	0.0	1.0	2.0	1.0	0.0	2.0	1.0	2.0	0.0	2.0	1.0	2.0	
Split [s]	0	41	30	41	0	41	30	41	0	41	30	41	0	41	30	41	
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7	
Pedestrian Clearance [s]	0	10	12	10	0	10	10	10	0	10	10	10	0	12	10	12	
Rest in Walk																	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	
I2, Clearance Lost Time [s]	0.0	2.6	3.6	2.6	0.0	2.6	3.6	2.6	0.0	3.6	2.6	3.6	0.0	3.6	2.6	3.6	
Minimum Recall			No				No				Yes				Yes		
Maximum Recall			No				No				No				No		
Pedestrian Recall			No				No				No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.08	0.06	0.04	0.05	0.17	0.04	0.06	0.03	0.17	0.06
s, saturation flow rate [veh/h]	1112	1900	1548	1304	1674	1072	1864	1296	1900	1552
c, Capacity [veh/h]	152	465	379	306	410	381	806	551	821	671
d1, Uniform Delay [s]	46.63	30.28	29.60	35.28	34.38	26.24	17.18	20.41	19.44	17.12
k, delay calibration	0.04	0.04	0.04	0.04	0.05	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.22	0.10	0.07	0.12	0.92	0.52	0.38	0.21	1.43	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

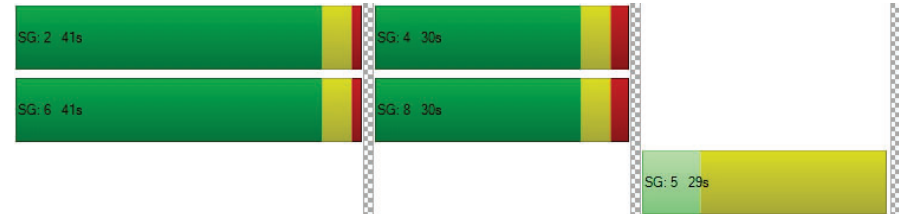
X, volume / capacity	0.56	0.24	0.15	0.20	0.70	0.10	0.14	0.06	0.40	0.14
d, Delay for Lane Group [s/veh]	47.85	30.38	29.66	35.39	35.30	26.76	17.56	20.61	20.87	17.54
Lane Group LOS	D	C	C	D	D	C	B	C	C	B
Critical Lane Group	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.16	2.10	1.05	1.25	6.25	0.71	1.65	0.52	5.28	1.30
50th-Percentile Queue Length [ft/ln]	54.12	52.50	26.14	31.20	156.14	17.76	41.17	12.97	131.99	32.49
95th-Percentile Queue Length [veh/ln]	3.90	3.78	1.88	2.25	10.34	1.28	2.96	0.93	9.05	2.34
95th-Percentile Queue Length [ft/ln]	97.42	94.50	47.06	56.16	258.60	31.96	74.11	23.35	226.19	58.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.85	47.85	30.38	29.66	35.39	35.39	35.30	35.30	26.76	26.76	17.56	17.56	20.61	20.61	20.87	17.54
Movement LOS	D	D	C	C	D	D	D	D	C	C	B	B	C	C	C	B
d_A, Approach Delay [s/veh]	36.18			35.31			19.83			20.17						
Approach LOS	D			D			B			C						
d_I, Intersection Delay [s/veh]	27.84															
Intersection LOS	C															
Intersection V/C	0.341															

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 34.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.283

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	19	281	0	29	107	41	66	90	0	18	157	146
Base Volume Input [veh/h]	19	281	0	29	107	41	66	90	0	18	157	146
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	281	0	29	107	41	66	90	0	18	157	146
Peak Hour Factor	0.8824	0.8824	1.0000	0.9439	0.9737	0.9737	0.8321	0.8321	1.0000	0.9017	0.9017	0.9017
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	80	0	8	27	11	20	27	0	5	44	40
Total Analysis Volume [veh/h]	22	318	0	31	110	42	79	108	0	20	174	162
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	295			0			8			32		
Bicycle Volume [bicycles/h]	6			27			58			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	22	22	22	22	68	68
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.06	0.03	0.10	0.11
s, saturation flow rate [veh/h]	1278	1863	1863	1543	1890	1443
c, Capacity [veh/h]	212	346	346	287	1077	822
d1, Uniform Delay [s]	47.36	47.91	42.22	40.84	12.35	12.48
k, delay calibration	0.04	0.08	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	7.41	0.19	0.09	0.37	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.92	0.32	0.15	0.18	0.20
d, Delay for Lane Group [s/veh]	47.44	55.31	42.42	40.93	12.72	13.02
Lane Group LOS	D	E	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.60	10.00	2.82	1.04	2.63	2.25
50th-Percentile Queue Length [ft/ln]	14.93	250.08	70.62	26.08	65.76	56.26
95th-Percentile Queue Length [veh/ln]	1.07	15.19	5.08	1.88	4.74	4.05
95th-Percentile Queue Length [ft/ln]	26.87	379.75	127.11	46.94	118.38	101.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.44	55.31	0.00	0.00	42.42	40.93	0.00	0.00	0.00	12.72	12.72	13.02
Movement LOS	D	E			D	D				B	B	B
d_A, Approach Delay [s/veh]	54.80		42.00		0.00		12.85					
Approach LOS	D		D		A		B					
d_I, Intersection Delay [s/veh]	34.90											
Intersection LOS	C											
Intersection V/C	0.283											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 25.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.535

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Base Volume Input [veh/h]	74	536	128	54	85	22	128	232	40	199	387
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	536	128	54	85	22	128	232	40	199	387	132
Peak Hour Factor	0.9461	0.9461	0.9461	0.8385	0.8385	0.8385	0.9433	0.9433	0.9433	0.9598	0.9598	0.9598
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	142	34	16	25	7	34	61	11	52	101	34
Total Analysis Volume [veh/h]	78	567	135	64	101	26	136	246	42	207	403	138
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	42	42	42	51	51	51	30	16	16	30	19	19
g / C, Green / Cycle	0.47	0.47	0.47	0.56	0.56	0.56	0.33	0.17	0.17	0.33	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.06	0.30	0.09	0.07	0.05	0.02	0.13	0.08	0.08	0.15	0.15	0.16
s, saturation flow rate [veh/h]	1298	1900	1550	982	1900	1570	1078	1900	1667	1395	1900	1607
c, Capacity [veh/h]	621	888	724	471	1071	885	429	333	292	506	397	336
d1, Uniform Delay [s]	16.32	18.22	14.00	11.60	9.07	8.73	22.82	33.19	33.47	22.83	33.11	33.61
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.28	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	3.50	0.57	0.60	0.18	0.06	0.16	0.34	0.46	1.37	0.89	1.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

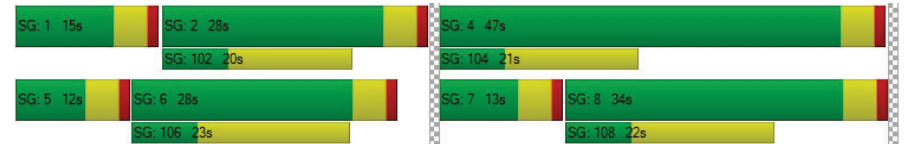
X, volume / capacity	0.13	0.64	0.19	0.14	0.09	0.03	0.32	0.44	0.48	0.41	0.71	0.77
d, Delay for Lane Group [s/veh]	16.73	21.72	14.57	12.20	9.24	8.79	22.98	33.53	33.93	24.19	33.99	35.04
Lane Group LOS	B	C	B	B	A	A	C	C	C	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.02	9.10	1.62	0.60	0.88	0.22	2.01	2.81	2.75	3.36	5.62	5.28
50th-Percentile Queue Length [ft/ln]	25.58	227.53	40.54	14.89	22.09	5.53	50.29	70.36	68.69	83.99	140.59	132.12
95th-Percentile Queue Length [veh/ln]	1.84	14.05	2.92	1.07	1.59	0.40	3.62	5.07	4.95	6.05	9.51	9.05
95th-Percentile Queue Length [ft/ln]	46.04	351.22	72.97	26.80	39.77	9.96	90.52	126.66	123.64	151.19	237.82	226.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.73	21.72	14.57	12.20	9.24	8.79	22.98	33.69	33.93	24.19	34.31	35.04
Movement LOS	B	C	B	B	A	A	C	C	C	C	C	D
d_A, Approach Delay [s/veh]	19.98			10.17			30.28			31.64		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	25.22											
Intersection LOS	C											
Intersection V/C	0.535											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	27.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.280

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	41	127	60	52	205	22	35	356	52	113	417	142
Base Volume Input [veh/h]	41	127	60	52	205	22	35	356	52	113	417	142
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	127	60	52	205	22	35	356	52	113	417	142
Peak Hour Factor	0.7703	0.7703	0.7703	0.9300	0.9300	0.9300	0.9229	0.9229	0.9229	0.9545	0.9545	0.9545
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	41	19	14	55	6	9	96	14	30	109	37
Total Analysis Volume [veh/h]	53	165	78	56	220	24	38	386	56	118	437	149
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	363			0			4			8		
Bicycle Volume [bicycles/h]	9			5			7			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	33	45	45	45
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.33	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.05	0.05	0.12	0.02	0.05	0.11	0.04	0.10	0.16	0.16
s, saturation flow rate [veh/h]	1179	1900	1579	1240	1900	1586	843	3618	1588	1181	1900	1710
c, Capacity [veh/h]	149	362	301	190	362	302	242	1206	529	553	850	765
d1, Uniform Delay [s]	45.76	35.91	34.50	42.96	37.09	33.30	33.38	24.91	23.06	16.73	18.20	18.28
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	0.33	0.17	0.32	0.61	0.04	1.38	0.70	0.40	0.07	1.18	1.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

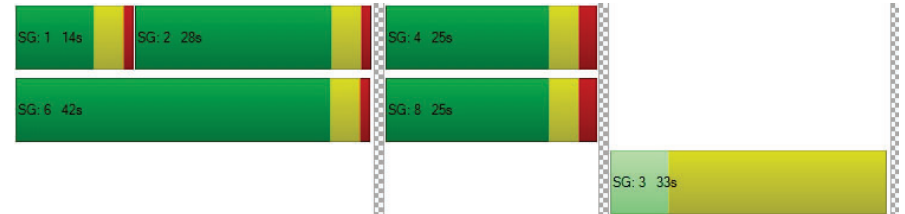
X, volume / capacity	0.35	0.46	0.26	0.30	0.61	0.08	0.16	0.32	0.11	0.21	0.36	0.37
d, Delay for Lane Group [s/veh]	46.29	36.25	34.67	43.28	37.70	33.34	34.76	25.61	23.46	16.80	19.38	19.64
Lane Group LOS	D	D	C	D	D	C	C	C	C	B	B	B
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.29	3.54	1.61	1.31	4.89	0.48	0.86	3.49	0.97	1.58	4.81	4.47
50th-Percentile Queue Length [ft/ln]	32.29	88.49	40.15	32.78	122.24	11.91	21.49	87.30	24.14	39.58	120.17	111.86
95th-Percentile Queue Length [veh/ln]	2.33	6.37	2.89	2.36	8.52	0.86	1.55	6.29	1.74	2.85	8.40	7.94
95th-Percentile Queue Length [ft/ln]	58.13	159.28	72.28	59.00	212.90	21.43	38.68	157.14	43.46	71.25	210.06	198.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.29	36.25	34.67	43.28	37.70	33.34	34.76	25.61	23.46	16.80	19.46	19.64
Movement LOS	D	D	C	D	D	C	C	C	C	B	B	B
d_A, Approach Delay [s/veh]	37.63			38.40			26.08			19.05		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	27.30											
Intersection LOS	C											
Intersection V/C	0.280											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.295

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Base Volume Input [veh/h]	41	216	46	14	275	33	9	86	44	37	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	216	46	14	275	33	9	86	44	37	145	53
Peak Hour Factor	0.8912	0.8912	0.8912	0.9148	0.9148	0.9148	0.8274	0.8274	0.8274	0.8393	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	61	13	4	75	9	3	26	13	11	43	16
Total Analysis Volume [veh/h]	46	242	52	15	301	36	11	104	53	44	173	63
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	276			0			17			7		
Bicycle Volume [bicycles/h]	20			10			12			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	34.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	40	40	40	40	0	0	30	0	30	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	49	49	49	49	49	49	19	19
g / C, Green / Cycle	0.49	0.49	0.49	0.49	0.49	0.49	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.03	0.01	0.09	0.09	0.10	0.17
s, saturation flow rate [veh/h]	1060	1900	1558	1156	1900	1818	1731	1671
c, Capacity [veh/h]	517	936	768	531	936	895	359	351
d1, Uniform Delay [s]	17.57	14.75	13.31	18.40	14.14	14.17	36.66	39.78
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.13
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.67	0.17	0.10	0.43	0.46	0.35	5.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

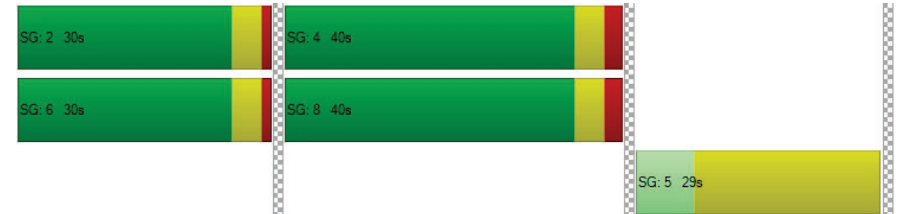
X, volume / capacity	0.09	0.26	0.07	0.03	0.18	0.19	0.47	0.80
d, Delay for Lane Group [s/veh]	17.91	15.42	13.48	18.50	14.56	14.63	37.01	44.81
Lane Group LOS	B	B	B	B	B	B	D	D
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.67	3.22	0.63	0.22	2.17	2.13	3.70	7.06
50th-Percentile Queue Length [ft/ln]	16.85	80.54	15.69	5.54	54.20	53.25	92.42	176.44
95th-Percentile Queue Length [veh/ln]	1.21	5.80	1.13	0.40	3.90	3.83	6.65	11.41
95th-Percentile Queue Length [ft/ln]	30.32	144.97	28.24	9.98	97.56	95.85	166.36	285.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.91	15.42	13.48	18.50	14.59	14.63	37.01	37.01	37.01	44.81	44.81	44.81
Movement LOS	B	B	B	B	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	15.46			14.76			37.01			44.81		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	25.63											
Intersection LOS	C											
Intersection V/C	0.295											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.285

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	44	292	74	39	329	10	0	174	62	0	198
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	292	74	39	329	10	0	174	62	0	198	50
Peak Hour Factor	0.8402	0.8402	0.8402	0.9000	0.9000	0.9000	1.0000	0.8977	0.8977	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	87	22	11	91	3	0	48	17	0	52	13
Total Analysis Volume [veh/h]	52	348	88	43	366	11	0	194	69	0	209	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	398			0			16			7		
Bicycle Volume [bicycles/h]	13			9			11			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	58	58	58	58	12	12	12	12
g / C, Green / Cycle	0.58	0.58	0.58	0.58	0.58	0.58	0.12	0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.05	0.18	0.06	0.04	0.10	0.10	0.10	0.04	0.07	0.07
s, saturation flow rate [veh/h]	1022	1900	1588	1049	1900	1879	1900	1563	1900	1752
c, Capacity [veh/h]	583	1092	913	545	1092	1080	233	192	233	215
d1, Uniform Delay [s]	13.14	11.06	9.56	15.70	10.03	10.04	42.87	40.27	41.34	41.60
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.77	0.21	0.28	0.34	0.35	2.99	0.42	0.80	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

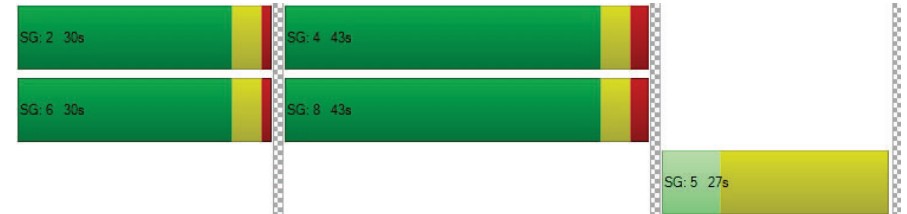
X, volume / capacity	0.09	0.32	0.10	0.08	0.17	0.17	0.83	0.36	0.56	0.61
d, Delay for Lane Group [s/veh]	13.44	11.83	9.77	15.98	10.38	10.39	45.86	40.69	42.14	42.65
Lane Group LOS	B	B	A	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.64	3.93	0.86	0.59	1.93	1.92	4.84	1.57	3.08	3.11
50th-Percentile Queue Length [ft/ln]	15.94	98.27	21.55	14.65	48.20	47.92	120.95	39.36	76.90	77.65
95th-Percentile Queue Length [veh/ln]	1.15	7.08	1.55	1.05	3.47	3.45	8.45	2.83	5.54	5.59
95th-Percentile Queue Length [ft/ln]	28.69	176.89	38.79	26.37	86.76	86.25	211.13	70.85	138.42	139.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.44	11.83	9.77	15.98	10.38	10.39	0.00	45.86	40.69	0.00	42.33	42.65
Movement LOS	B	B	A	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	11.63			10.96			44.50			42.39		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.09											
Intersection LOS	C											
Intersection V/C	0.285											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 33.8
Level Of Service: C
Volume to Capacity (v/c): 0.377

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	122	409	153	11	281	42	0	143	43	101	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	409	153	11	281	42	0	143	43	101	200	43
Peak Hour Factor	0.9144	0.9144	0.9144	0.9709	0.9709	0.9709	1.0000	0.9118	0.9118	0.8866	0.8866	0.8866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	112	42	3	72	11	0	39	12	28	56	12
Total Analysis Volume [veh/h]	133	447	167	11	289	43	0	157	47	114	226	49
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	516			0			19			11		
Bicycle Volume [bicycles/h]	29			44			5			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	11	57	57	64	49	49	12	27	24	24	24
g / C, Green / Cycle	0.09	0.48	0.48	0.53	0.40	0.40	0.10	0.23	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.07	0.24	0.11	0.01	0.09	0.09	0.08	0.03	0.08	0.12	0.03
s, saturation flow rate [veh/h]	1810	1900	1574	1022	1900	1796	1900	1588	1483	1900	1590
c, Capacity [veh/h]	161	903	748	472	769	727	189	360	288	379	318
d1, Uniform Delay [s]	53.78	21.62	18.50	14.96	23.35	23.42	53.06	36.98	41.45	43.64	39.67
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.06	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.05	1.94	0.69	0.09	0.65	0.72	3.57	0.06	0.51	0.56	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.50	0.22	0.02	0.22	0.23	0.83	0.13	0.40	0.60	0.15
d, Delay for Lane Group [s/veh]	57.83	23.56	19.19	15.05	24.01	24.14	56.63	37.04	41.96	44.20	39.75
Lane Group LOS	E	C	B	B	C	C	E	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.09	8.88	2.83	0.15	3.23	3.16	4.83	1.12	2.91	6.11	1.20
50th-Percentile Queue Length [ft/ln]	102.37	222.12	70.70	3.75	80.69	79.02	120.84	27.88	72.76	152.71	29.99
95th-Percentile Queue Length [veh/ln]	7.37	13.77	5.09	0.27	5.81	5.69	8.44	2.01	5.24	10.16	2.16
95th-Percentile Queue Length [ft/ln]	184.26	344.33	127.25	6.75	145.24	142.24	210.98	50.19	130.96	254.05	53.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.83	23.56	19.19	15.05	24.06	24.14	0.00	56.63	37.04	41.96	44.20	39.75
Movement LOS	E	C	B	B	C	C		E	D	D	D	D
d_A, Approach Delay [s/veh]	28.68			23.78			52.12			42.98		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.83											
Intersection LOS	C											
Intersection V/C	0.377											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	14.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.281

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	261	707	0	0	384	30	181	0	84	71	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	261	707	0	0	384	30	181	0	84	71	66	31
Peak Hour Factor	0.8612	0.8612	1.0000	1.0000	0.9000	0.9000	0.8717	1.0000	0.8717	0.9130	0.9130	0.9130
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	205	0	0	107	8	52	0	24	19	18	8
Total Analysis Volume [veh/h]	303	821	0	0	427	33	208	0	96	78	72	34
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	722			0			156			3		
Bicycle Volume [bicycles/h]	7			56			7			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	22	71	0	0	49	20	29	0	22	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	82	82	68	68	9	9
g / C, Green / Cycle	0.68	0.68	0.56	0.56	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.28	0.23	0.12	0.12	0.05	0.05
s, saturation flow rate [veh/h]	1079	3618	1900	1842	1826	1601
c, Capacity [veh/h]	765	2477	1069	1037	131	115
d1, Uniform Delay [s]	7.57	7.72	13.06	13.11	54.59	54.68
k, delay calibration	0.20	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.62	0.36	0.46	0.49	3.01	3.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

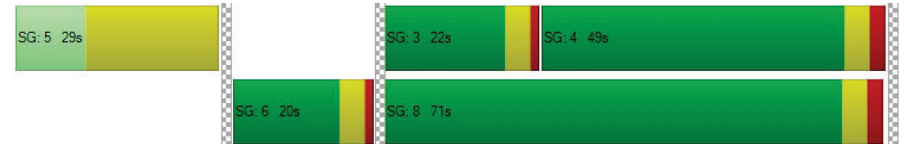
X, volume / capacity	0.40	0.33	0.22	0.22	0.74	0.76
d, Delay for Lane Group [s/veh]	8.19	8.08	13.52	13.61	57.60	58.48
Lane Group LOS	A	A	B	B	E	E
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.90	4.17	3.13	3.15	3.00	2.73
50th-Percentile Queue Length [ft/ln]	72.61	104.25	78.27	78.73	75.01	68.28
95th-Percentile Queue Length [veh/ln]	5.23	7.51	5.64	5.67	5.40	4.92
95th-Percentile Queue Length [ft/ln]	130.69	187.64	140.88	141.71	135.03	122.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.19	8.08	0.00	0.00	13.56	13.61	0.00	0.00	0.00	57.60	58.25	58.48
Movement LOS	A	A			B	B				E	E	E
d_A, Approach Delay [s/veh]	8.11		13.56			0.00		58.01				
Approach LOS	A		B			A		E				
d_I, Intersection Delay [s/veh]	14.72											
Intersection LOS	B											
Intersection V/C	0.281											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		841	531
Base Volume Input [veh/h]	420	0	0	536		
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	420	0	0	536	841	531
Peak Hour Factor	0.9052	1.0000	1.0000	0.8323	0.9608	0.9608
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	116	0	0	161	219	138
Total Analysis Volume [veh/h]	464	0	0	644	875	553
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	42.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	45	0	0	45	45	45
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	40
g / C, Green / Cycle	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.13	0.18	0.35	0.50
s, saturation flow rate [veh/h]	3618	3618	2500	1100
c, Capacity [veh/h]	1628	1628	1119	492
d1, Uniform Delay [s]	15.60	16.54	21.09	24.82
k, delay calibration	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	0.72	0.46	78.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.40	0.78	1.12
d, Delay for Lane Group [s/veh]	16.04	17.26	21.55	103.58
Lane Group LOS	B	B	C	F
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.99	4.42	6.64	19.48
50th-Percentile Queue Length [ft/ln]	74.82	110.55	166.06	486.98
95th-Percentile Queue Length [veh/ln]	5.39	7.87	10.87	28.92
95th-Percentile Queue Length [ft/ln]	134.67	196.76	271.73	722.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.04	0.00	0.00	17.26	21.55	103.58
Movement LOS	B			B	C	F
d_A, Approach Delay [s/veh]	16.04		17.26		53.32	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]			37.34			
Intersection LOS			D			
Intersection V/C			0.681			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 39.2
Level Of Service: D
Volume to Capacity (v/c): 0.552

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound		
	Northbound	Southbound	Eastbound	Westbound					
Approach	[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00		
Crosswalk	Yes			No			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound		
	24	374	431	244	818	207	45	533	67
Base Volume Input [veh/h]	24	374	431	244	818	207	45	533	67
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	374	431	244	818	207	45	533	67
Peak Hour Factor	0.8933	0.8933	0.8933	0.9143	0.9143	0.9143	0.7752	0.7752	0.7752
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	105	121	67	224	57	15	172	22
Total Analysis Volume [veh/h]	27	419	482	267	895	226	58	688	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			109		
Bicycle Volume [bicycles/h]	0			2			13		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	12	36	36	25	49	49	29	29	29	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	No		No	Yes			No			
Maximum Recall	No	Yes		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	25	25	34	57	57	17	17	17
g / C, Green / Cycle	0.03	0.28	0.28	0.38	0.63	0.63	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.01	0.22	0.31	0.08	0.30	0.32	0.16	0.16	0.16
s, saturation flow rate [veh/h]	1810	1900	1533	3514	1900	1680	1882	1729	1617
c, Capacity [veh/h]	51	528	426	1344	1201	1062	351	322	301
d1, Uniform Delay [s]	43.13	30.11	32.50	18.57	8.75	9.01	35.39	35.38	35.52
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.10	11.66	84.70	0.03	1.38	1.77	2.25	2.41	2.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

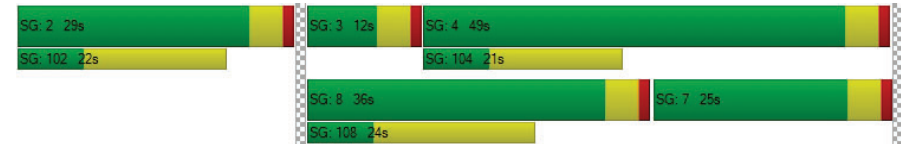
X, volume / capacity	0.53	0.79	1.13	0.20	0.48	0.51	0.85	0.85	0.87
d, Delay for Lane Group [s/veh]	46.23	41.77	117.20	18.60	10.13	10.78	37.64	37.79	38.46
Lane Group LOS	D	D	F	B	B	B	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.63	9.86	18.97	1.82	5.68	5.59	6.32	5.81	5.61
50th-Percentile Queue Length [ft/ln]	15.78	246.61	474.16	45.45	141.92	139.79	157.96	145.21	140.16
95th-Percentile Queue Length [veh/ln]	1.14	15.02	28.05	3.27	9.58	9.47	10.44	9.76	9.49
95th-Percentile Queue Length [ft/ln]	28.41	375.39	701.35	81.81	239.60	236.74	261.01	244.03	237.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.23	41.77	117.20	18.60	10.36	10.78	37.64	37.91	38.46	0.00	0.00	0.00
Movement LOS	D	D	F	B	B	B	D	D	D			
d_A, Approach Delay [s/veh]	81.08			12.01			37.95			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	39.23											
Intersection LOS	D											
Intersection V/C	0.552											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 16.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.275

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	130	108	102	51	77	10	18	436	19	59	550	32
Base Volume Input [veh/h]	130	108	102	51	77	10	18	436	19	59	550	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	108	102	51	77	10	18	436	19	59	550	32
Peak Hour Factor	0.9659	0.9659	0.9659	0.8023	0.8023	0.8023	0.9311	0.9311	0.9311	0.9371	0.9371	0.9371
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	28	26	16	24	3	5	117	5	16	147	9
Total Analysis Volume [veh/h]	135	112	106	64	96	12	19	468	20	63	587	34
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			88			39			23		
Bicycle Volume [bicycles/h]	7			9			2			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	22	65	65	65	65	65	65
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.11	0.06	0.07	0.05	0.06	0.02	0.13	0.01	0.07	0.16	0.17
s, saturation flow rate [veh/h]	1256	1900	1535	1272	1845	805	3618	1538	929	1900	1841
c, Capacity [veh/h]	256	414	334	258	401	524	2352	1000	610	1236	1197
d1, Uniform Delay [s]	40.81	32.50	32.86	38.39	32.49	9.83	7.02	6.19	9.47	7.32	7.34
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.13	0.20	0.19	0.13	0.13	0.19	0.04	0.34	0.49	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

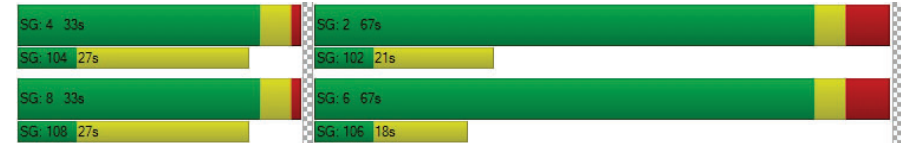
X, volume / capacity	0.53	0.27	0.32	0.25	0.27	0.04	0.20	0.02	0.10	0.25	0.26
d, Delay for Lane Group [s/veh]	41.44	32.63	33.06	38.57	32.62	9.96	7.21	6.23	9.81	7.81	7.86
Lane Group LOS	D	C	C	D	C	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.16	2.23	2.14	1.40	2.15	0.20	1.90	0.15	0.65	2.73	2.69
50th-Percentile Queue Length [ft/ln]	79.02	55.77	53.46	35.05	53.76	4.99	47.40	3.71	16.28	68.22	67.36
95th-Percentile Queue Length [veh/ln]	5.69	4.02	3.85	2.52	3.87	0.36	3.41	0.27	1.17	4.91	4.85
95th-Percentile Queue Length [ft/ln]	142.23	100.38	96.23	63.10	96.77	8.98	85.32	6.68	29.31	122.80	121.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.44	32.63	33.06	38.57	32.62	32.62	9.96	7.21	6.23	9.81	7.83	7.86
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	36.13			34.83			7.27			8.02		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	16.27											
Intersection LOS	B											
Intersection V/C	0.275											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 19.5
Level Of Service: B
Volume to Capacity (v/c): 0.262

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	90	272	46	19	99	26	9	139	14	21	153	63
Base Volume Input [veh/h]	90	272	46	19	99	26	9	139	14	21	153	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	272	46	19	99	26	9	139	14	21	153	63
Peak Hour Factor	0.8947	0.8947	0.8947	0.8571	0.8571	0.8571	0.8100	0.8100	0.8100	0.8464	0.8464	0.8464
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	76	13	6	29	8	3	43	4	6	45	19
Total Analysis Volume [veh/h]	101	304	51	22	116	30	11	172	17	25	181	74
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	30			86			30			19		
Bicycle Volume [bicycles/h]	27			10			3			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	69	21	21
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.69	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.10	0.02	0.08	0.11	0.16
s, saturation flow rate [veh/h]	1246	1900	1778	1037	1813	1827	1712
c, Capacity [veh/h]	871	1317	1233	730	1257	430	407
d1, Uniform Delay [s]	6.99	5.19	5.21	6.80	5.11	34.52	36.70
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.22	0.24	0.08	0.19	0.78	2.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

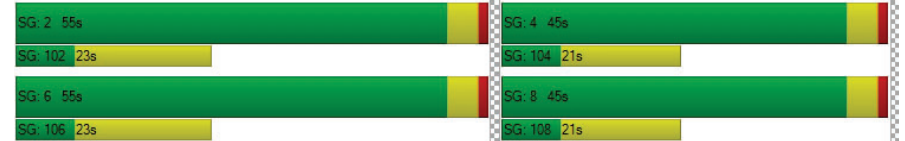
X, volume / capacity	0.12	0.14	0.14	0.03	0.12	0.47	0.69
d, Delay for Lane Group [s/veh]	7.26	5.41	5.45	6.88	5.29	35.31	38.79
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.82	1.16	1.13	0.17	0.92	4.28	6.47
50th-Percentile Queue Length [ft/ln]	20.43	28.95	28.14	4.33	23.08	107.08	161.69
95th-Percentile Queue Length [veh/ln]	1.47	2.08	2.03	0.31	1.66	7.68	10.64
95th-Percentile Queue Length [ft/ln]	36.78	52.10	50.65	7.80	41.54	191.93	265.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.26	5.42	5.45	6.88	5.29	5.29	35.31	35.31	35.31	38.79	38.79	38.79
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.83			5.50			35.31			38.79		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	19.48											
Intersection LOS	B											
Intersection V/C	0.262											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.271

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	69	465	89	23	68	14	26	249	16	22	192	51
Base Volume Input [veh/h]	69	465	89	23	68	14	26	249	16	22	192	51
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	465	89	23	68	14	26	249	16	22	192	51
Peak Hour Factor	0.9555	0.9555	0.9555	0.8468	0.8468	0.8468	0.9094	0.9094	0.9094	0.9331	0.9331	0.9331
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	122	23	7	20	4	7	68	4	6	51	14
Total Analysis Volume [veh/h]	72	487	93	27	80	17	29	274	18	24	206	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	152			133			81			50		
Bicycle Volume [bicycles/h]	10			10			4			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	22	65	65	65	65	65	65
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.16	0.03	0.05	0.02	0.08	0.08	0.02	0.11	0.04
s, saturation flow rate [veh/h]	1224	1900	1735	841	1790	1161	1900	1836	1069	1900	1495
c, Capacity [veh/h]	264	419	382	114	394	749	1231	1189	709	1231	968
d1, Uniform Delay [s]	37.76	36.04	36.32	46.61	32.14	8.90	6.72	6.74	8.34	6.96	6.44
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.84	1.07	0.39	0.12	0.10	0.20	0.21	0.09	0.29	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.71	0.74	0.24	0.25	0.04	0.12	0.12	0.03	0.17	0.06
d, Delay for Lane Group [s/veh]	37.97	36.88	37.38	47.00	32.26	9.00	6.92	6.95	8.43	7.25	6.55
Lane Group LOS	D	D	D	D	C	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.57	6.64	6.38	0.66	1.92	0.28	1.16	1.15	0.22	1.69	0.42
50th-Percentile Queue Length [ft/ln]	39.24	166.01	159.54	16.55	47.92	6.95	29.10	28.87	5.55	42.29	10.58
95th-Percentile Queue Length [veh/ln]	2.83	10.87	10.52	1.19	3.45	0.50	2.10	2.08	0.40	3.05	0.76
95th-Percentile Queue Length [ft/ln]	70.64	271.66	263.12	29.79	86.25	12.52	52.38	51.97	9.98	76.13	19.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.97	37.07	37.38	47.00	32.26	32.26	9.00	6.93	6.95	8.43	7.25	6.55
Movement LOS	D	D	D	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.22			35.47			7.12			7.22		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	23.88											
Intersection LOS	C											
Intersection V/C	0.271											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.0
Level Of Service: C
Volume to Capacity (v/c): 0.330

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	Base Volume Input [veh/h]	69	531	60	25	33	47	66	214	22	18	233
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	531	60	25	33	47	66	214	22	18	233	32
Peak Hour Factor	0.8505	0.8505	0.8505	0.8750	0.8750	0.8750	0.9438	0.9438	0.9438	0.8844	0.8844	0.8844
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	156	18	7	9	13	17	57	6	5	66	9
Total Analysis Volume [veh/h]	81	624	71	29	38	54	70	227	23	20	263	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	89			102			37			54		
Bicycle Volume [bicycles/h]	34			64			3			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	26	26	26	26	26	65	65	65	65	65
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.19	0.04	0.06	0.06	0.13	0.02	0.14	0.02
s, saturation flow rate [veh/h]	1291	1900	1786	761	1602	1112	1859	1128	1900	1518
c, Capacity [veh/h]	309	485	456	111	409	721	1213	732	1240	991
d1, Uniform Delay [s]	35.53	34.08	34.29	46.77	29.42	9.26	6.96	8.76	6.99	6.17
k, delay calibration	0.04	0.08	0.10	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	1.65	2.26	0.46	0.10	0.27	0.38	0.07	0.39	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.73	0.75	0.26	0.23	0.10	0.21	0.03	0.21	0.04
d, Delay for Lane Group [s/veh]	35.69	35.72	36.55	47.22	29.53	9.53	7.35	8.83	7.38	6.24
Lane Group LOS	D	D	D	D	C	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.70	7.85	7.71	0.71	1.73	0.69	2.02	0.19	2.13	0.26
50th-Percentile Queue Length [ft/ln]	42.60	196.35	192.66	17.86	43.17	17.16	50.45	4.64	53.24	6.50
95th-Percentile Queue Length [veh/ln]	3.07	12.45	12.26	1.29	3.11	1.24	3.63	0.33	3.83	0.47
95th-Percentile Queue Length [ft/ln]	76.68	311.25	306.47	32.15	77.71	30.88	90.80	8.35	95.84	11.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.69	36.08	36.55	47.22	29.53	29.53	9.53	7.35	7.35	8.83	7.38	6.24
Movement LOS	D	D	D	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	36.09			33.77			7.82			7.35		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	24.05											
Intersection LOS	C											
Intersection V/C	0.330											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 21.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.297

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	14	632	27	13	17	42	0	0	0	6	122
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	632	27	13	17	42	0	0	0	6	122	19
Peak Hour Factor	0.9399	0.8905	0.8905	0.7826	0.7826	0.7826	1.0000	1.0000	1.0000	0.9301	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	177	8	4	5	13	0	0	0	2	36	6
Total Analysis Volume [veh/h]	15	710	30	17	22	54	0	0	0	6	145	23
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	178			3			54			110		
Bicycle Volume [bicycles/h]	23			4			4			13		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	42	42	3	49	40
g / C, Green / Cycle	0.42	0.42	0.03	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.20	0.02	0.01	0.05	0.09
s, saturation flow rate [veh/h]	3618	1347	1810	1630	1849
c, Capacity [veh/h]	1522	567	48	804	749
d1, Uniform Delay [s]	20.87	17.16	47.83	13.47	19.47
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.03	0.18	1.66	0.23	0.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

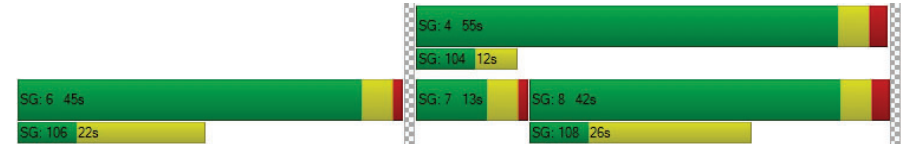
X, volume / capacity	0.47	0.05	0.36	0.09	0.22
d, Delay for Lane Group [s/veh]	21.90	17.34	49.49	13.71	20.17
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.04	0.43	0.43	0.93	2.67
50th-Percentile Queue Length [ft/ln]	151.12	10.82	10.82	23.14	66.70
95th-Percentile Queue Length [veh/ln]	10.08	0.78	0.78	1.67	4.80
95th-Percentile Queue Length [ft/ln]	251.93	19.47	19.47	41.65	120.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.90	17.34	49.49	13.71	13.71	0.00	0.00	0.00	0.00	20.17	20.17
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		21.72		20.25			0.00				20.17	
Approach LOS		C		C			A				C	
d_I, Intersection Delay [s/veh]							21.32					
Intersection LOS							C					
Intersection V/C							0.297					

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 17.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.234

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	10	77	15	15	107	13	33	158	28	23	160	30
Base Volume Input [veh/h]	10	77	15	15	107	13	33	158	28	23	160	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	77	15	15	107	13	33	158	28	23	160	30
Peak Hour Factor	0.8225	0.8225	0.8225	0.8437	0.8437	0.8437	0.8830	0.8830	0.8830	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	23	5	4	32	4	9	45	8	6	44	8
Total Analysis Volume [veh/h]	12	94	18	18	127	15	37	179	32	25	177	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	14	14	76	76	76
g / C, Green / Cycle	0.14	0.14	0.76	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.07	0.09	0.14	0.11	0.02
s, saturation flow rate [veh/h]	1775	1781	1720	1795	1576
c, Capacity [veh/h]	294	295	1356	1413	1205
d1, Uniform Delay [s]	39.36	40.18	3.20	3.10	2.83
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	0.58	0.30	0.21	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.54	0.18	0.14	0.03
d, Delay for Lane Group [s/veh]	39.72	40.75	3.50	3.31	2.87
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.78	3.67	1.09	0.86	0.13
50th-Percentile Queue Length [ft/ln]	69.57	91.82	27.30	21.42	3.23
95th-Percentile Queue Length [veh/ln]	5.01	6.61	1.97	1.54	0.23
95th-Percentile Queue Length [ft/ln]	125.22	165.27	49.13	38.55	5.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.72	39.72	39.72	40.75	40.75	40.75	3.50	3.50	3.50	3.31	3.31	2.87
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	39.72			40.75			3.50			3.25		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.05											
Intersection LOS	B											
Intersection V/C	0.234											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 14.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.298

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	13	66	25	53	66	23	28	342	21	39	261
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	66	25	53	66	23	28	342	21	39	261	52
Peak Hour Factor	0.9629	0.9629	0.9629	0.8875	0.8875	0.8875	0.8500	0.8500	0.8500	0.9263	0.9263	0.9263
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	17	6	15	19	6	8	101	6	11	70	14
Total Analysis Volume [veh/h]	14	69	26	60	74	26	33	402	25	42	282	56
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	17	17	17	17	69	69	69	69	69	69
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.69	0.69	0.69	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.01	0.06	0.05	0.06	0.03	0.24	0.02	0.05	0.16	0.04
s, saturation flow rate [veh/h]	1123	1593	1147	1585	987	1710	1379	892	1710	1356
c, Capacity [veh/h]	179	276	185	275	679	1188	957	591	1188	942
d1, Uniform Delay [s]	41.39	36.31	42.82	36.44	7.66	6.10	4.75	9.17	5.58	4.86
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.27	0.37	0.30	0.14	0.77	0.05	0.23	0.47	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.34	0.32	0.36	0.05	0.34	0.03	0.07	0.24	0.06
d, Delay for Lane Group [s/veh]	41.46	36.58	43.20	36.74	7.80	6.87	4.80	9.40	6.06	4.99
Lane Group LOS	D	D	D	D	A	A	A	A	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.32	2.02	1.41	2.14	0.29	3.21	0.16	0.42	2.05	0.36
50th-Percentile Queue Length [ft/ln]	7.88	50.60	35.14	53.48	7.31	80.15	3.91	10.59	51.29	8.99
95th-Percentile Queue Length [veh/ln]	0.57	3.64	2.53	3.85	0.53	5.77	0.28	0.76	3.69	0.65
95th-Percentile Queue Length [ft/ln]	14.18	91.08	63.25	96.26	13.16	144.26	7.04	19.05	92.31	16.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.46	36.58	36.58	43.20	36.74	36.74	7.80	6.87	4.80	9.40	6.06	4.99
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.21			39.16			6.82			6.27		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.29											
Intersection LOS	B											
Intersection V/C	0.298											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 19.3
Level Of Service: B
Volume to Capacity (v/c): 0.295

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	22	158	28	31	134	24	66	159	38	28	183	36
Base Volume Input [veh/h]	22	158	28	31	134	24	66	159	38	28	183	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	158	28	31	134	24	66	159	38	28	183	36
Peak Hour Factor	0.8965	0.8965	0.8965	0.7875	0.7875	0.7875	0.7827	0.7827	0.7827	0.8125	0.8125	0.8125
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	44	8	10	43	8	21	51	12	9	56	11
Total Analysis Volume [veh/h]	25	176	31	39	170	30	84	203	49	34	225	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	72	72	72
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.72	0.72	0.72
(v / s)_i Volume / Saturation Flow Rate	0.02	0.11	0.03	0.11	0.18	0.03	0.17
s, saturation flow rate [veh/h]	1149	1827	1175	1799	1584	1573	1757
c, Capacity [veh/h]	149	350	149	344	1181	1127	1299
d1, Uniform Delay [s]	44.46	36.85	45.19	36.77	4.73	4.15	4.81
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.60	0.35	0.58	0.49	0.07	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.59	0.26	0.58	0.24	0.04	0.23
d, Delay for Lane Group [s/veh]	44.66	37.45	45.53	37.35	5.22	4.22	5.23
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.60	4.68	0.95	4.51	1.77	0.26	1.88
50th-Percentile Queue Length [ft/ln]	15.05	116.99	23.86	112.75	44.27	6.59	46.98
95th-Percentile Queue Length [veh/ln]	1.08	8.23	1.72	7.99	3.19	0.47	3.38
95th-Percentile Queue Length [ft/ln]	27.10	205.68	42.95	199.83	79.68	11.86	84.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.66	37.45	37.45	45.53	37.35	37.35	5.22	5.22	4.22	5.23	5.23	5.23
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	38.23			38.68			5.07			5.23		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.28											
Intersection LOS	B											
Intersection V/C	0.295											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.336

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	19	224	36	49	84	22	53	332	39	23	319
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	224	36	49	84	22	53	332	39	23	319	90
Peak Hour Factor	0.9300	0.9300	0.9300	0.7908	0.7908	0.7908	0.9059	0.9059	0.9059	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	60	10	15	27	7	15	92	11	6	87	25
Total Analysis Volume [veh/h]	20	241	39	62	106	28	59	366	43	25	349	98
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	24	24	24	24	63	63	63	63	63	63
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.63	0.63	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.06	0.07	0.06	0.11	0.11	0.03	0.18	0.06
s, saturation flow rate [veh/h]	1254	1842	1108	1811	1040	1900	1812	982	1900	1551
c, Capacity [veh/h]	262	437	156	429	625	1199	1143	629	1199	979
d1, Uniform Delay [s]	36.54	34.31	45.24	31.42	11.63	7.64	7.66	9.59	8.34	7.27
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.59	0.61	0.15	0.30	0.31	0.34	0.12	0.62	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.64	0.40	0.31	0.09	0.17	0.18	0.04	0.29	0.10
d, Delay for Lane Group [s/veh]	36.59	34.90	45.85	31.57	11.93	7.95	8.00	9.71	8.95	7.47
Lane Group LOS	D	C	D	C	B	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.43	6.19	1.54	2.70	0.68	1.82	1.78	0.25	3.35	0.83
50th-Percentile Queue Length [ft/ln]	10.71	154.82	38.46	67.52	17.12	45.39	44.41	6.36	83.74	20.63
95th-Percentile Queue Length [veh/ln]	0.77	10.27	2.77	4.86	1.23	3.27	3.20	0.46	6.03	1.49
95th-Percentile Queue Length [ft/ln]	19.27	256.85	69.23	121.54	30.81	81.70	79.95	11.45	150.73	37.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.59	34.90	34.90	45.85	31.57	31.57	11.93	7.97	8.00	9.71	8.95	7.47
Movement LOS	D	C	C	D	C	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	35.01			36.09			8.47			8.69		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.86											
Intersection LOS	B											
Intersection V/C	0.336											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.436

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	141	352	260	58	379	19	15	517	160	210	536	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	352	260	58	379	19	15	517	160	210	536	37
Peak Hour Factor	0.9050	0.9050	0.9050	0.9194	0.9194	0.9194	0.8737	0.8737	0.8737	0.9366	0.9366	0.9366
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	97	72	16	103	5	4	148	46	56	143	10
Total Analysis Volume [veh/h]	156	389	287	63	412	21	17	592	183	224	572	40
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	39			27			19			22		
Bicycle Volume [bicycles/h]	6			9			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	43	43	43	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.43	0.43	0.43	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.13	0.20	0.18	0.06	0.11	0.12	0.02	0.16	0.12	0.22	0.16	0.03
s, saturation flow rate [veh/h]	1209	1900	1560	1002	1900	1858	846	3618	1551	1013	3618	1542
c, Capacity [veh/h]	435	670	551	116	442	432	354	1574	675	579	2008	856
d1, Uniform Delay [s]	23.54	26.33	25.66	48.48	33.25	33.29	22.71	19.09	18.10	12.11	11.76	10.16
k, delay calibration	0.25	0.08	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.17	0.56	0.29	1.47	0.32	0.33	0.26	0.69	0.99	1.95	0.36	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.58	0.52	0.54	0.49	0.50	0.05	0.38	0.27	0.39	0.28	0.05
d, Delay for Lane Group [s/veh]	24.72	26.89	25.95	49.96	33.57	33.62	22.97	19.78	19.09	14.06	12.11	10.26
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.72	7.48	5.35	1.60	4.52	4.46	0.30	4.69	2.85	2.68	3.25	0.40
50th-Percentile Queue Length [ft/ln]	67.90	187.01	133.68	40.04	112.89	111.60	7.42	117.22	71.16	67.02	81.14	10.12
95th-Percentile Queue Length [veh/ln]	4.89	11.97	9.14	2.88	8.00	7.93	0.53	8.24	5.12	4.83	5.84	0.73
95th-Percentile Queue Length [ft/ln]	122.23	299.15	228.48	72.07	200.02	198.22	13.36	206.00	128.08	120.64	146.06	18.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.72	26.89	25.95	49.96	33.59	33.62	22.97	19.78	19.09	14.06	12.11	10.26
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	26.16		35.67				19.69			12.55		
Approach LOS	C		D				B			B		
d_I, Intersection Delay [s/veh]	22.17											
Intersection LOS	C											
Intersection V/C	0.436											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 46.8
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.882

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	124	616	119	19	667	33	23	106	77	61	133	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	616	119	19	667	33	23	106	77	61	133	44
Peak Hour Factor	0.9138	0.9138	0.9138	0.9461	0.9461	0.9461	0.7357	0.7357	0.7357	0.9154	0.9154	0.9154
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	169	33	5	176	9	8	36	26	17	36	12
Total Analysis Volume [veh/h]	136	674	130	20	705	35	31	144	105	67	145	48
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164			102			111			62		
Bicycle Volume [bicycles/h]	4			3			0			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6	6
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18	18
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No	
Maximum Recall	No	No		No	No			No				No	
Pedestrian Recall	No	No		No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	56	56	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.56	0.56	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.22	0.03	0.20	0.20	0.28	0.08	0.65	0.03
s, saturation flow rate [veh/h]	891	1900	1741	787	1900	1839	615	1323	327	1412
c, Capacity [veh/h]	589	1062	973	521	989	958	210	361	137	385
d1, Uniform Delay [s]	8.03	12.42	12.52	7.54	14.28	14.34	30.86	28.73	34.94	27.38
k, delay calibration	0.38	0.50	0.50	0.50	0.50	0.50	0.38	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	1.08	1.23	0.14	1.10	1.16	24.63	0.16	281.24	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

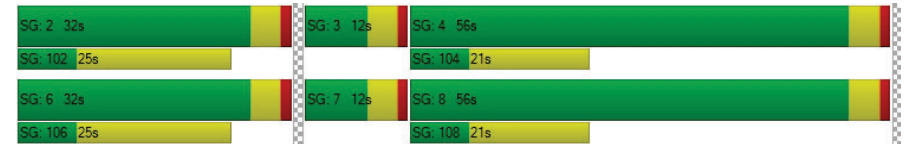
X, volume / capacity	0.23	0.39	0.40	0.04	0.38	0.38	0.83	0.29	1.55	0.12
d, Delay for Lane Group [s/veh]	8.72	13.49	13.76	7.68	15.38	15.50	55.50	28.89	316.17	27.43
Lane Group LOS	A	B	B	A	B	B	E	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.18	5.27	5.05	0.17	5.15	5.10	4.73	1.96	14.04	0.85
50th-Percentile Queue Length [ft/ln]	29.52	131.76	126.31	4.17	128.66	127.44	118.20	49.09	350.94	21.35
95th-Percentile Queue Length [veh/ln]	2.13	9.04	8.74	0.30	8.87	8.80	8.29	3.53	24.32	1.54
95th-Percentile Queue Length [ft/ln]	53.14	225.88	218.47	7.50	221.67	220.01	207.35	88.36	607.88	38.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.72	13.59	13.76	7.68	15.44	15.50	55.50	55.50	28.89	316.17	316.17	27.43
Movement LOS	A	B	B	A	B	B	E	E	C	F	F	C
d_A, Approach Delay [s/veh]	12.91			15.24			45.52			262.87		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	46.79											
Intersection LOS	D											
Intersection V/C	0.882											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.474

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTL			TTL			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
Base Volume Input [veh/h]	103	741	182	72	711	17	19	301	111	109	305	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	741	182	72	711	17	19	301	111	109	305	116
Peak Hour Factor	0.9396	0.9396	0.9396	0.8850	0.8850	0.8850	0.9209	0.9209	0.9209	0.9532	0.9532	0.9532
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	197	48	20	201	5	5	82	30	29	80	30
Total Analysis Volume [veh/h]	110	789	194	81	803	19	21	327	121	114	320	122
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			54			48			29		
Bicycle Volume [bicycles/h]	10			3			1			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	59	48	48	59	48	48	20	20	20	32	32	32
g / C, Green / Cycle	0.59	0.48	0.48	0.59	0.48	0.48	0.20	0.20	0.20	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.13	0.27	0.27	0.11	0.22	0.22	0.02	0.12	0.13	0.09	0.17	0.08
s, saturation flow rate [veh/h]	853	1900	1745	765	1900	1880	1046	1900	1651	1210	1900	1509
c, Capacity [veh/h]	518	921	846	450	914	904	115	383	333	372	598	475
d1, Uniform Delay [s]	10.03	18.13	18.24	10.81	17.22	17.23	46.91	36.33	36.70	25.92	28.25	25.56
k, delay calibration	0.25	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.07	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	2.38	2.69	0.87	1.61	1.64	0.28	0.58	0.80	0.31	0.28	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

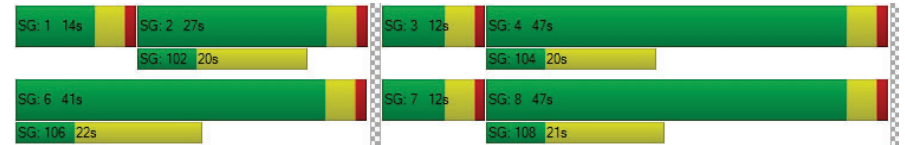
X, volume / capacity	0.21	0.55	0.56	0.18	0.45	0.45	0.18	0.61	0.65	0.31	0.54	0.26
d, Delay for Lane Group [s/veh]	10.50	20.51	20.93	11.68	18.83	18.87	47.19	36.91	37.50	26.23	28.53	25.67
Lane Group LOS	B	C	C	B	B	B	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.06	8.56	8.10	0.82	6.50	6.46	0.52	5.15	4.87	2.00	6.26	2.16
50th-Percentile Queue Length [ft/ln]	26.39	213.89	202.42	20.60	162.58	161.50	12.94	128.80	121.76	49.89	156.41	53.90
95th-Percentile Queue Length [veh/ln]	1.90	13.35	12.76	1.48	10.69	10.63	0.93	8.87	8.49	3.59	10.36	3.88
95th-Percentile Queue Length [ft/ln]	47.51	333.81	319.08	37.09	267.13	265.70	23.29	221.86	212.24	89.80	258.96	97.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.50	20.66	20.93	11.68	18.85	18.87	47.19	37.08	37.50	26.23	28.53	25.67
Movement LOS	B	C	C	B	B	B	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	19.69			18.21			37.64			27.43		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	23.46											
Intersection LOS	C											
Intersection V/C	0.474											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.9
Level Of Service: C
Volume to Capacity (v/c): 0.533

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	78	960	180	24	854	32	43	175	119	138	212	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	960	180	24	854	32	43	175	119	138	212	43
Peak Hour Factor	0.9760	0.9760	0.9760	0.9479	0.9479	0.9479	0.8510	0.8510	0.8510	0.8772	0.8772	0.8772
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	246	46	6	225	8	13	51	35	39	60	12
Total Analysis Volume [veh/h]	80	984	184	25	901	34	51	206	140	157	242	49
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	58			79			72			42		
Bicycle Volume [bicycles/h]	48			57			6			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	6	51	51	41	41	41	26	26	26	35	35
g / C, Green / Cycle	0.06	0.51	0.51	0.41	0.41	0.41	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.04	0.32	0.33	0.05	0.25	0.25	0.04	0.11	0.09	0.29	0.03
s, saturation flow rate [veh/h]	1810	1900	1733	488	1900	1860	1156	1900	1481	1375	1486
c, Capacity [veh/h]	104	978	893	147	782	765	73	488	380	497	524
d1, Uniform Delay [s]	46.47	17.18	17.51	37.68	23.01	23.08	50.00	30.97	30.49	29.19	21.64
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.45	2.86	3.47	2.48	3.41	3.56	4.56	0.22	0.22	12.93	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.61	0.64	0.17	0.60	0.61	0.70	0.42	0.37	0.80	0.09
d, Delay for Lane Group [s/veh]	50.92	20.03	20.98	40.16	26.43	26.64	54.56	31.19	30.72	42.11	21.67
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.08	10.05	9.84	0.64	9.16	9.09	1.35	4.08	2.73	9.32	0.76
50th-Percentile Queue Length [ft/ln]	51.98	251.19	246.02	16.11	229.05	227.34	33.75	101.92	68.30	233.06	18.91
95th-Percentile Queue Length [veh/ln]	3.74	15.25	14.99	1.16	14.13	14.04	2.43	7.34	4.92	14.33	1.36
95th-Percentile Queue Length [ft/ln]	93.56	381.15	374.64	29.00	353.15	350.97	60.74	183.46	122.94	358.24	34.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.92	20.40	20.98	40.16	26.53	26.64	54.56	31.19	30.72	42.11	42.11	21.67
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	C
d_A, Approach Delay [s/veh]	22.45			26.89			34.02			39.88		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	27.90											
Intersection LOS	C											
Intersection V/C	0.533											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 63.5
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.499

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	67	1234	111	19	1108	11	6	55	58	66	101	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	1234	111	19	1108	11	6	55	58	66	101	34
Peak Hour Factor	0.9193	0.9193	0.9193	0.9119	0.9119	0.9119	0.8750	0.7635	0.7635	0.9427	0.8293	0.8293
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	336	30	5	304	3	2	18	19	18	30	10
Total Analysis Volume [veh/h]	73	1342	121	21	1215	12	7	72	76	70	122	41
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			32			25			16		
Bicycle Volume [bicycles/h]	13			12			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	2	7	4	6	5	2	3	1	6	8
Auxiliary Signal Groups									2.3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	0	7	7
Maximum Green [s]	15	30	40	15	30	40	0	40	15	0	40	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	30	0	30	0	0	30	0	30	30	0	30	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	18	17	0	18	17	0	17	0	0	17	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	0.0	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	6	33	33	3	30	30	40	40
g / C, Green / Cycle	0.07	0.37	0.37	0.03	0.33	0.33	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.04	0.39	0.40	0.01	0.32	0.32	0.09	0.09
s, saturation flow rate [veh/h]	1810	1900	1826	1810	1900	1890	1713	1800
c, Capacity [veh/h]	120	698	671	60	635	632	763	802
d1, Uniform Delay [s]	40.77	28.38	28.38	42.46	29.39	29.42	15.09	15.16
k, delay calibration	0.04	0.50	0.50	0.04	0.40	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	50.30	58.17	1.31	24.91	25.42	0.57	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

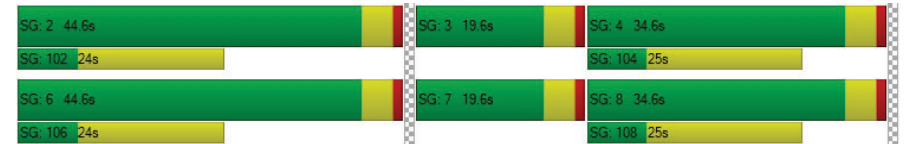
X, volume / capacity	0.61	1.06	1.08	0.35	0.97	0.97	0.19	0.20
d, Delay for Lane Group [s/veh]	42.62	78.68	86.55	43.77	54.31	54.84	15.66	15.73
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.61	23.97	24.50	0.47	16.84	16.88	1.89	2.08
50th-Percentile Queue Length [ft/ln]	40.33	599.18	612.42	11.82	420.95	421.93	47.24	52.12
95th-Percentile Queue Length [veh/ln]	2.90	33.26	34.36	0.85	23.57	23.61	3.40	3.75
95th-Percentile Queue Length [ft/ln]	72.59	831.57	859.07	21.27	589.19	590.37	85.03	93.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.62	82.22	86.55	43.77	54.57	54.84	0.00	15.66	15.66	0.00	15.73	15.73
Movement LOS	D	F	F	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	80.68		54.39		15.66		15.73					
Approach LOS	F		D		B		B					
d_I, Intersection Delay [s/veh]	63.55											
Intersection LOS	E											
Intersection V/C	0.499											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 87.6
 Level Of Service: F
 Volume to Capacity (v/c): 0.941

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	257	665	0	1171	40	0	0	0	0	711	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	257	665	0	1171	40	0	0	0	0	711	239	789
Peak Hour Factor	0.8698	0.8698	1.0000	1.0000	0.8931	0.8931	1.0000	1.0000	1.0000	0.9451	0.9451	0.9451
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	191	0	328	11	0	0	0	0	188	63	209
Total Analysis Volume [veh/h]	295	765	0	1311	45	0	0	0	0	752	253	835
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1			10			43		
Bicycle Volume [bicycles/h]	3			0			5			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	23	55	0	0	32	32	0	0	0	35	35	35
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	16	50	29	29	30	30	30	30
g / C, Green / Cycle	0.18	0.56	0.33	0.33	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.16	0.21	0.25	0.24	0.53	0.26	0.29	0.51
s, saturation flow rate [veh/h]	1810	3618	3618	1865	900	1847	1470	900
c, Capacity [veh/h]	330	2026	1182	609	304	624	497	304
d1, Uniform Delay [s]	35.96	11.05	27.19	26.92	29.80	26.61	27.72	29.80
k, delay calibration	0.22	0.50	0.50	0.50	0.50	0.23	0.30	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.57	0.54	4.74	7.94	269.2	4.15	10.93	252.1
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.38	0.76	0.74	1.56	0.77	0.85	1.52
d, Delay for Lane Group [s/veh]	51.53	11.59	31.94	34.87	299.0	30.76	38.64	281.9
Lane Group LOS	D	B	C	C	F	C	D	F
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	7.61	4.09	9.18	9.67	28.70	9.08	9.24	27.26
50th-Percentile Queue Length [ft/ln]	190.37	102.20	229.60	241.65	717.4	227.1	230.9	681.4
95th-Percentile Queue Length [veh/ln]	12.14	7.36	14.15	14.76	46.65	14.03	14.22	44.19
95th-Percentile Queue Length [ft/ln]	303.51	183.96	353.85	369.12	1166.	350.6	355.5	1104.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.53	11.59	0.00	0.00	32.85	34.87	0.00	0.00	0.00	194.59	32.39	178.09
Movement LOS	D	B			C	C				F	C	F
d_A, Approach Delay [s/veh]	22.70		32.91			0.00		165.18				
Approach LOS	C		C			A		F				
d_I, Intersection Delay [s/veh]	87.55											
Intersection LOS	F											
Intersection V/C	0.941											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 35.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.797

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	785	735	789	1055	0	199	474	262	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	785	735	789	1055	0	199	474	262	0	0	0
Peak Hour Factor	1.0000	0.8776	0.8776	0.8633	0.8633	1.0000	0.7468	0.7468	0.7468	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	224	209	228	306	0	67	159	88	0	0	0
Total Analysis Volume [veh/h]	0	894	838	914	1222	0	266	635	351	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			15			37		
Bicycle Volume [bicycles/h]	0			5			8			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	20	30	0	37	37	37	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	30	30	23	53	0	37	37	37	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	22	56	25	25	25
g / C, Green / Cycle	0.32	0.32	0.32	0.25	0.62	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.24	0.28	0.28	0.26	0.34	0.25	0.25	0.22
s, saturation flow rate [veh/h]	3618	1521	1521	3514	3618	1847	1729	1585
c, Capacity [veh/h]	1152	485	485	875	2238	516	483	443
d1, Uniform Delay [s]	27.50	29.24	29.24	33.83	9.89	31.29	31.27	30.06
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.11	0.11	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	2.38	2.38	42.67	0.96	6.17	6.36	1.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

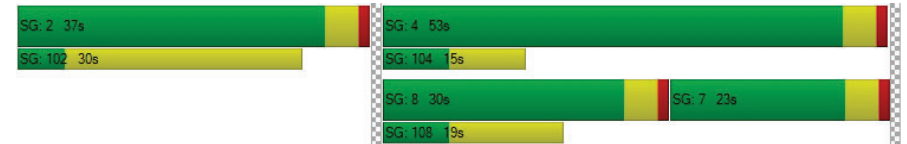
X, volume / capacity	0.75	0.89	0.89	1.04	0.55	0.90	0.90	0.79
d, Delay for Lane Group [s/veh]	27.87	31.62	31.62	76.49	10.85	37.46	37.63	31.39
Lane Group LOS	C	C	C	F	B	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.00	8.76	8.76	14.44	6.43	10.18	9.53	6.89
50th-Percentile Queue Length [ft/ln]	199.89	218.95	218.95	361.04	160.80	254.58	238.25	172.32
95th-Percentile Queue Length [veh/ln]	12.63	13.61	13.61	21.20	10.59	15.42	14.59	11.20
95th-Percentile Queue Length [ft/ln]	315.83	340.28	340.28	529.97	264.78	385.41	364.82	279.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	27.87	31.62	76.49	10.85	0.00	37.46	37.57	31.39	0.00	0.00	0.00
Movement LOS		C	C	F	B		D	D	C			
d_A, Approach Delay [s/veh]		29.75		38.94			35.82			0.00		
Approach LOS		C		D			D			A		
d_I, Intersection Delay [s/veh]		35.07										
Intersection LOS		D										
Intersection V/C		0.797										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 7.0
Level Of Service: A
Volume to Capacity (v/c): 0.345

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	830	127	53	561	39	78
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	830	127	53	561	39	78
Peak Hour Factor	0.8732	0.8732	0.9247	0.9247	0.8357	0.8357
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	238	36	14	152	12	23
Total Analysis Volume [veh/h]	951	145	57	607	47	93
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	79		91		60	
Bicycle Volume [bicycles/h]	2		28		7	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	77	77	77	77	9	9
g / C, Green / Cycle	0.77	0.77	0.77	0.77	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.26	0.09	0.10	0.17	0.03	0.08
s, saturation flow rate [veh/h]	3618	1558	598	3618	1357	1126
c, Capacity [veh/h]	2797	1205	473	2797	129	107
d1, Uniform Delay [s]	3.49	2.83	6.02	3.09	42.44	44.66
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.20	0.52	0.18	0.65	8.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.12	0.12	0.22	0.37	0.87
d, Delay for Lane Group [s/veh]	3.82	3.04	6.55	3.27	43.09	52.77
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.33	0.61	0.46	1.31	1.10	2.47
50th-Percentile Queue Length [ft/ln]	58.26	15.35	11.61	32.85	27.40	61.85
95th-Percentile Queue Length [veh/ln]	4.19	1.11	0.84	2.37	1.97	4.45
95th-Percentile Queue Length [ft/ln]	104.87	27.63	20.90	59.13	49.31	111.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.82	3.04	6.55	3.27	43.09	52.77
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	3.71		3.55		49.52	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	7.03					
Intersection LOS	A					
Intersection V/C	0.345					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 94.2
Level Of Service: F
Volume to Capacity (v/c): 0.679

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	22	188	403	68	82	9	18	350	60	107	54	23
Base Volume Input [veh/h]	22	188	403	68	82	9	18	350	60	107	54	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	188	403	68	82	9	18	350	60	107	54	23
Peak Hour Factor	0.9761	0.9761	0.9761	0.8833	0.8833	0.8833	0.7985	0.7985	0.7985	0.9583	0.9583	0.9583
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	48	103	19	23	3	6	110	19	28	14	6
Total Analysis Volume [veh/h]	23	193	413	77	93	10	23	438	75	112	56	24
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	38			99			69			77		
Bicycle Volume [bicycles/h]	1			1			56			15		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	45	0	10	45	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	46	38	46	40	16	16	16	16
g / C, Green / Cycle	0.58	0.47	0.58	0.50	0.21	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.37	0.08	0.06	0.02	0.28	0.12	0.05
s, saturation flow rate [veh/h]	1363	1621	969	1848	1193	1810	901	1692
c, Capacity [veh/h]	883	764	433	915	262	372	90	348
d1, Uniform Delay [s]	7.21	17.91	11.90	10.82	29.96	31.87	40.12	26.57
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.15	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	8.30	0.90	0.25	0.05	175.14	116.78	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

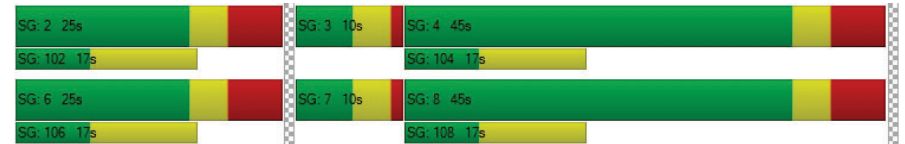
X, volume / capacity	0.03	0.79	0.18	0.11	0.09	1.38	1.24	0.23
d, Delay for Lane Group [s/veh]	7.22	26.21	12.80	11.07	30.01	207.01	156.91	26.70
Lane Group LOS	A	C	B	B	C	F	F	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.15	10.14	0.63	0.97	0.38	25.06	4.65	1.24
50th-Percentile Queue Length [ft/ln]	3.66	253.47	15.69	24.29	9.58	626.38	116.25	30.90
95th-Percentile Queue Length [veh/ln]	0.26	15.36	1.13	1.75	0.69	38.59	8.37	2.22
95th-Percentile Queue Length [ft/ln]	6.59	384.02	28.25	43.71	17.24	964.67	209.26	55.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.22	26.21	26.21	12.80	11.07	11.07	30.01	207.01	207.01	156.91	26.70	26.70
Movement LOS	A	C	C	B	B	C	F	F	F	C	C	C
d_A, Approach Delay [s/veh]	25.52			11.81			199.42			102.65		
Approach LOS	C			B			F			F		
d_I, Intersection Delay [s/veh]	94.19											
Intersection LOS	F											
Intersection V/C	0.679											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 10.6
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.400

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00				30.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				No				Yes			

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	32	0	1085	209	184	875	0	32	1085	209	46	0	43	0	13	52
Base Volume Input [veh/h]	32	0	1085	209	184	875	0	32	1085	209	46	0	43	0	13	52
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	32	0	1085	209	184	875	0	32	1085	209	46	0	43	0	13	52
Peak Hour Factor	1.000	1.000	0.913	0.913	0.9733	0.9733	1.0000	1.0000	1.0000	1.0000	0.8241	1.0000	0.8241	1.0000	1.0000	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	8	0	297	57	47	225	0	8	271	52	14	0	13	0	13	52
Total Analysis Volume [veh/h]	32	0	1188	229	189	899	0	32	1085	209	56	0	52	0	13	52
Presence of On-Street Parking	No			No	No	No	No	No	No	No	No	No	No	No	No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	25				40				0				0			
Bicycle Volume [bicycles/h]	0				3				13				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	60.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	0	53	0	10	53	0	0	0	0	27	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk			No			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	56	56	66	58	15	15
g / C, Green / Cycle	0.03	0.62	0.62	0.73	0.65	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.14	0.30	0.25	0.03	0.03
s, saturation flow rate [veh/h]	1810	3618	1615	633	3618	1729	1500
c, Capacity [veh/h]	56	2253	1006	490	2341	291	253
d1, Uniform Delay [s]	43.00	9.54	7.47	6.40	7.46	32.15	32.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.32	0.89	0.53	2.28	0.48	0.12	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

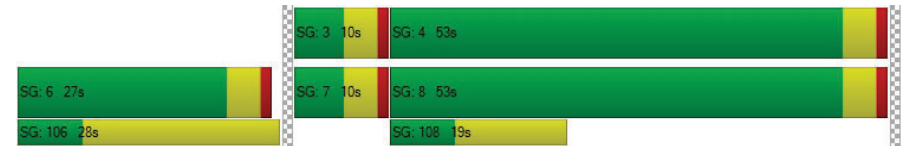
X, volume / capacity	0.57	0.53	0.23	0.39	0.38	0.19	0.21
d, Delay for Lane Group [s/veh]	46.32	10.43	7.99	8.68	7.94	32.27	32.38
Lane Group LOS	D	B	A	A	A	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.75	6.06	1.89	1.13	3.70	1.05	0.98
50th-Percentile Queue Length [ft/ln]	18.68	151.45	47.28	28.23	92.48	26.15	24.38
95th-Percentile Queue Length [veh/ln]	1.34	10.09	3.40	2.03	6.66	1.88	1.76
95th-Percentile Queue Length [ft/ln]	33.62	252.36	85.10	50.81	166.47	47.08	43.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.32	0.00	10.43	7.99	8.68	7.94	0.00	0.00	0.00	0.00	32.27	0.00	32.38
Movement LOS	D		B	A	A	A					C		C
d_A, Approach Delay [s/veh]	10.84			8.07			0.00			32.32			
Approach LOS	B			A			A			C			
d_I, Intersection Delay [s/veh]	10.57												
Intersection LOS	B												
Intersection V/C	0.400												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 36.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.890

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	29	2509	2	280	2274	24	8	4	13	77	21	281
Base Volume Input [veh/h]	29	2509	2	280	2274	24	8	4	13	77	21	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	2509	2	280	2274	24	8	4	13	77	21	281
Peak Hour Factor	0.8616	0.8616	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	728	1	72	581	6	3	2	5	23	6	85
Total Analysis Volume [veh/h]	34	2912	2	286	2326	25	13	6	21	93	25	338
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No		No	No		No	No		No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes		No	Yes		No	No		No	No	No	
Maximum Recall	No	No		No	No		No	No		No	No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	197	197	197	197	197	197	197	197
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	6	112	35	141	141	35	35	75
g / C, Green / Cycle	0.03	0.57	0.18	0.72	0.72	0.18	0.18	0.38
(v / s)_i Volume / Saturation Flow Rate	0.02	0.56	0.16	0.43	0.43	0.14	0.16	0.21
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1890	279	725	1615
c, Capacity [veh/h]	53	2940	324	2593	1355	74	162	612
d1, Uniform Delay [s]	94.82	42.17	79.16	13.81	13.85	70.51	79.17	48.23
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.13	0.21	0.39
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.68	3.00	3.20	0.08	0.16	7.25	11.29	2.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

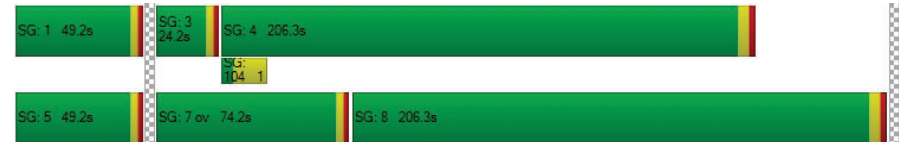
X, volume / capacity	0.64	0.99	0.88	0.59	0.60	0.54	0.73	0.55
d, Delay for Lane Group [s/veh]	99.50	45.17	82.36	13.89	14.00	77.76	90.46	51.00
Lane Group LOS	F	D	F	B	B	E	F	D
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.79	45.46	14.37	16.11	16.96	1.88	6.47	13.89
50th-Percentile Queue Length [ft/ln]	44.71	1136.49	359.16	402.72	424.05	46.88	161.82	347.22
95th-Percentile Queue Length [veh/ln]	3.22	56.52	20.58	22.69	23.72	3.38	10.65	20.00
95th-Percentile Queue Length [ft/ln]	80.48	1412.93	514.56	567.28	592.91	84.38	266.14	500.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	99.50	45.17	0.00	82.36	13.93	14.00	77.76	77.76	77.76	90.46	90.46	51.00
Movement LOS	F	D		F	B	B	E	E	E	F	F	D
d_A, Approach Delay [s/veh]	45.80		21.35			77.76			61.21			
Approach LOS	D		C			E			E			
d_I, Intersection Delay [s/veh]	36.56											
Intersection LOS	D											
Intersection V/C	0.890											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type:	Signalized	Delay (sec / veh):	110.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.031

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	225	526	104	26	434	74	59	113	188	0	54	113	69
Base Volume Input [veh/h]	225	526	104	26	434	74	59	113	188	0	54	113	69
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	526	104	26	434	74	59	113	188	0	54	113	69
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	60	140	28	7	124	21	16	31	51	0	17	36	22
Total Analysis Volume [veh/h]	240	561	111	30	496	85	65	124	206	0	68	142	87
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	3	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.03	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.13	0.30	0.09	0.02	0.26	0.06	0.54	0.14	0.64	0.10
s, saturation flow rate [veh/h]	1810	1900	1267	1810	1900	1352	348	1518	330	860
c, Capacity [veh/h]	189	1156	771	51	1012	720	113	570	109	159
d1, Uniform Delay [s]	44.75	10.87	8.40	47.97	14.78	11.66	40.56	22.55	40.71	36.93
k, delay calibration	0.14	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	133.40	1.46	0.39	3.85	1.70	0.33	339.57	0.14	451.43	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

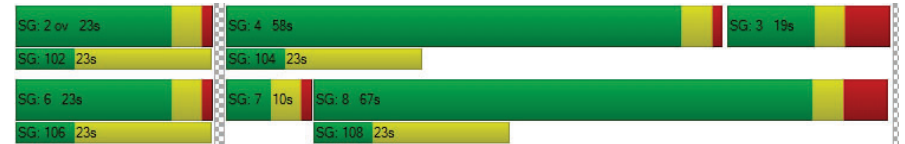
X, volume / capacity	1.27	0.49	0.14	0.58	0.49	0.12	1.68	0.36	1.93	0.55
d, Delay for Lane Group [s/veh]	178.15	12.33	8.79	51.81	16.48	11.99	380.14	22.69	492.14	38.02
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	11.64	6.81	1.05	0.79	7.24	0.98	13.47	3.53	16.31	1.94
50th-Percentile Queue Length [ft/ln]	291.03	170.34	26.34	19.75	181.05	24.52	336.75	88.19	407.70	48.48
95th-Percentile Queue Length [veh/ln]	18.79	11.09	1.90	1.42	11.66	1.77	23.35	6.35	28.26	3.49
95th-Percentile Queue Length [ft/ln]	469.85	277.37	47.42	35.56	291.38	44.14	583.78	158.73	706.54	87.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	178.15	12.33	8.79	51.81	16.48	11.99	380.14	380.14	22.69	492.1	492.1	492.1	38.02
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	55.54			17.59			193.72			359.12			
Approach LOS	E			B			F			F			
d_I, Intersection Delay [s/veh]	110.42												
Intersection LOS	F												
Intersection V/C	1.031												

Sequence

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



Intersection Level Of Service Report

Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.383

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	624	154	104	544	234	269
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	624	154	104	544	234	269
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	169	42	27	143	67	77
Total Analysis Volume [veh/h]	675	167	110	574	269	310
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.19	0.12	0.12	0.16	0.16	0.11	0.17
s, saturation flow rate [veh/h]	3618	1371	914	3618	1299	1676	1064
c, Capacity [veh/h]	2101	796	665	2509	226	292	186
d1, Uniform Delay [s]	10.81	10.01	5.57	5.58	40.46	38.44	41.18
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.04	0.16
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	0.60	0.54	0.21	12.48	0.92	34.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

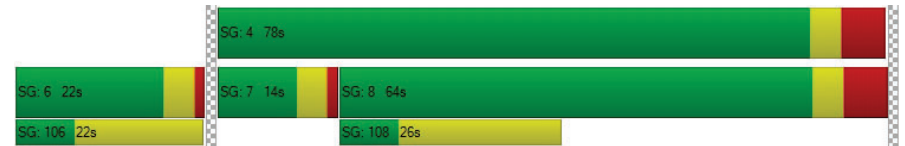
X, volume / capacity	0.32	0.21	0.17	0.23	0.91	0.65	0.99
d, Delay for Lane Group [s/veh]	11.21	10.61	6.11	5.79	52.94	39.36	75.56
Lane Group LOS	B	B	A	A	D	D	E
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.75	1.80	0.76	1.99	5.67	4.38	6.22
50th-Percentile Queue Length [ft/ln]	93.76	44.93	18.93	49.78	141.66	109.50	155.57
95th-Percentile Queue Length [veh/ln]	6.75	3.23	1.36	3.58	9.57	7.81	10.31
95th-Percentile Queue Length [ft/ln]	168.76	80.87	34.07	89.60	239.25	195.31	257.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.21	10.61	6.11	5.79	49.30	61.59
Movement LOS	B	B	A	A	D	E
d_A, Approach Delay [s/veh]	11.09		5.84		55.65	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	21.64					
Intersection LOS	C					
Intersection V/C	0.383					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 12.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.360

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	626	97	67	718	106	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	626	97	67	718	106	109
Peak Hour Factor	0.9093	0.9093	0.9413	0.9413	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	27	18	191	31	32
Total Analysis Volume [veh/h]	688	107	71	763	125	129
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389		253	
Bicycle Volume [bicycles/h]	6		7		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.19	0.08	0.09	0.21	0.15
s, saturation flow rate [veh/h]	3618	1339	755	3618	1705
c, Capacity [veh/h]	2235	827	453	2235	426
d1, Uniform Delay [s]	9.00	7.92	13.54	9.24	33.02
k, delay calibration	0.50	0.50	0.50	0.50	0.05
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	0.32	0.74	0.42	0.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

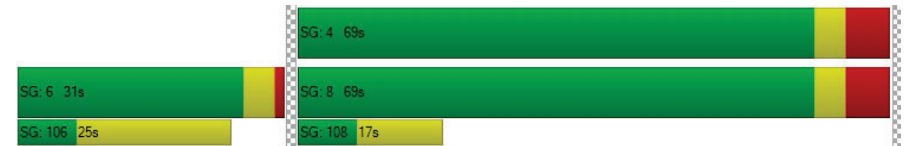
X, volume / capacity	0.31	0.13	0.16	0.34	0.60
d, Delay for Lane Group [s/veh]	9.36	8.25	14.27	9.65	33.66
Lane Group LOS	A	A	B	A	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.39	0.97	0.94	3.86	5.36
50th-Percentile Queue Length [ft/ln]	84.71	24.29	23.61	96.49	134.10
95th-Percentile Queue Length [veh/ln]	6.10	1.75	1.70	6.95	9.16
95th-Percentile Queue Length [ft/ln]	152.49	43.72	42.49	173.69	229.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.36	8.25	14.27	9.65	33.66	33.66
Movement LOS	A	A	B	A	C	C
d_A, Approach Delay [s/veh]	9.21		10.05		33.66	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	12.88					
Intersection LOS	B					
Intersection V/C	0.360					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	30.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	652	201	96	690	158	119
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	652	201	96	690	158	119
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	184	57	27	197	44	33
Total Analysis Volume [veh/h]	735	227	110	789	174	131
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.20	0.18	0.13	0.22	0.21	0.11
s, saturation flow rate [veh/h]	3618	1296	880	3618	832	1238
c, Capacity [veh/h]	2190	785	672	2618	120	325
d1, Uniform Delay [s]	9.77	9.44	4.64	4.88	42.78	30.40
k, delay calibration	0.50	0.50	0.50	0.50	0.28	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	0.93	0.52	0.30	226.08	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

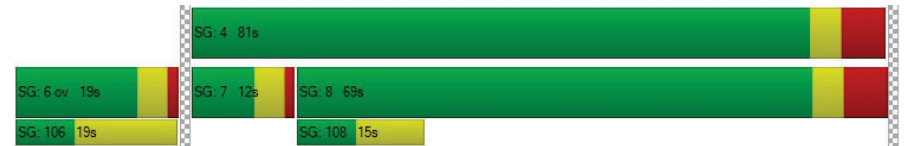
X, volume / capacity	0.34	0.29	0.16	0.30	1.45	0.40
d, Delay for Lane Group [s/veh]	10.19	10.37	5.17	5.18	268.86	30.69
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.86	2.43	0.66	2.52	10.47	2.60
50th-Percentile Queue Length [ft/ln]	96.46	60.75	16.45	63.05	261.77	65.06
95th-Percentile Queue Length [veh/ln]	6.95	4.37	1.18	4.54	17.99	4.68
95th-Percentile Queue Length [ft/ln]	173.64	109.36	29.62	113.50	449.76	117.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.19	10.37	5.17	5.18	268.86	30.69
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.23		5.17		166.57	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	30.15					
Intersection LOS	C					
Intersection V/C	0.435					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 41.8
Level Of Service: D
Volume to Capacity (v/c): 0.491

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	33	791	142	67	828	75	41	13	103	137	35	138
Base Volume Input [veh/h]	33	791	142	67	828	75	41	13	103	137	35	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	791	142	67	828	75	41	13	103	137	35	138
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	222	41	18	217	20	12	6	30	38	10	39
Total Analysis Volume [veh/h]	37	887	165	71	870	79	48	24	121	154	39	155
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	81	81	73	73	13	20	20
g / C, Green / Cycle	0.54	0.54	0.49	0.49	0.09	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.05	0.25	0.25	0.26	0.10	0.11	0.12
s, saturation flow rate [veh/h]	698	3618	1900	1835	1666	1827	1280
c, Capacity [veh/h]	341	1965	923	892	149	247	173
d1, Uniform Delay [s]	18.66	20.73	26.40	26.71	68.27	62.70	63.80
k, delay calibration	0.04	0.50	0.50	0.50	0.38	0.04	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.75	2.04	2.27	104.80	2.05	8.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

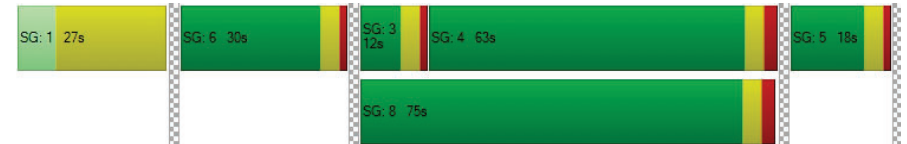
X, volume / capacity	0.11	0.45	0.51	0.53	1.13	0.78	0.90
d, Delay for Lane Group [s/veh]	18.71	21.48	28.44	28.98	173.07	64.74	72.60
Lane Group LOS	B	C	C	C	F	E	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.61	9.69	12.23	12.41	10.03	7.34	6.31
50th-Percentile Queue Length [ft/ln]	15.37	242.25	305.86	310.33	250.80	183.53	157.69
95th-Percentile Queue Length [veh/ln]	1.11	14.80	17.97	18.19	15.95	11.78	10.43
95th-Percentile Queue Length [ft/ln]	27.66	369.88	449.27	454.78	398.69	294.61	260.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.71	21.48	0.00	0.00	28.69	28.98	173.07	0.00	173.07	64.74	64.74	72.60
Movement LOS	B	C			C	C	F		F	E	E	E
d_A, Approach Delay [s/veh]	21.37		28.71			173.07		68.24				
Approach LOS	C		C			F		E				
d_I, Intersection Delay [s/veh]	41.84											
Intersection LOS	D											
Intersection V/C	0.491											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 24.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.520

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	300	700	995	63	104	651
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	300	700	995	63	104	651
Peak Hour Factor	0.9528	0.9528	0.9744	0.9744	0.9595	0.9594
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	184	255	16	27	170
Total Analysis Volume [veh/h]	315	735	1021	65	108	679
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	13	80	80	80	13	31
g / C, Green / Cycle	0.11	0.67	0.67	0.67	0.11	0.26
(v / s)_i Volume / Saturation Flow Rate	0.09	0.20	0.28	0.05	0.09	0.24
s, saturation flow rate [veh/h]	3514	3618	3618	1348	1224	2859
c, Capacity [veh/h]	379	2414	2414	900	134	731
d1, Uniform Delay [s]	52.42	8.32	9.24	6.97	52.13	43.54
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.83	0.33	0.55	0.16	4.23	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

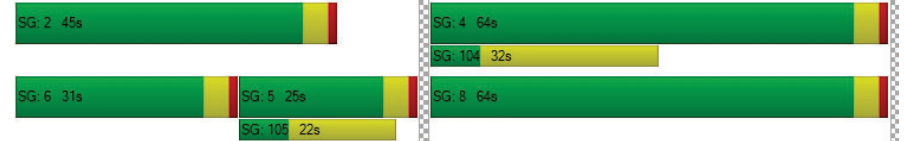
X, volume / capacity	0.83	0.30	0.42	0.07	0.80	0.93
d, Delay for Lane Group [s/veh]	54.25	8.65	9.79	7.13	56.36	45.92
Lane Group LOS	D	A	A	A	E	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.74	3.89	6.02	0.60	3.49	10.59
50th-Percentile Queue Length [ft/ln]	118.53	97.31	150.42	14.98	87.21	264.84
95th-Percentile Queue Length [veh/ln]	8.31	7.01	10.04	1.08	6.28	15.93
95th-Percentile Queue Length [ft/ln]	207.80	175.16	250.99	26.96	156.97	398.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.25	8.65	9.79	7.13	56.36	45.92
Movement LOS	D	A	A	A	E	D
d_A, Approach Delay [s/veh]	22.33		9.63		47.35	
Approach LOS	C		A		D	
d_I, Intersection Delay [s/veh]	24.35					
Intersection LOS	C					
Intersection V/C	0.520					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 38.8
Level Of Service: D
Volume to Capacity (v/c): 0.560

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Northbound				Northeastbound				Southwestbound			
Approach												
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
					56	91	72	3	337	98	177	211
Base Volume Input [veh/h]	0	0	0	0	56	91	72	3	337	98	177	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	56	91	72	3	337	98	177	211
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	19	30	24	1	89	26	47	57
Total Analysis Volume [veh/h]	0	0	0	0	74	120	95	3	355	103	190	226
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	6				70				188			
Bicycle Volume [bicycles/h]	33				8				56			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk					No						No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall					Yes				Yes		Yes	
Maximum Recall					No				No		No	
Pedestrian Recall					No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	51	51	51	63	63	63
g / C, Green / Cycle	0.42	0.42	0.42	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.08	0.28	0.10	0.15
s, saturation flow rate [veh/h]	1162	1900	1362	1284	1900	1461
c, Capacity [veh/h]	470	806	578	705	996	766
d1, Uniform Delay [s]	26.82	21.14	21.53	18.43	15.10	16.07
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.36	0.68	2.56	0.43	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.14	0.18	0.50	0.19	0.30
d, Delay for Lane Group [s/veh]	27.53	21.50	22.21	20.98	15.52	17.06
Lane Group LOS	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.55	1.99	1.91	6.13	2.81	3.62
50th-Percentile Queue Length [ft/ln]	38.80	49.76	47.65	153.34	70.26	90.47
95th-Percentile Queue Length [veh/ln]	2.79	3.58	3.43	10.20	5.06	6.51
95th-Percentile Queue Length [ft/ln]	69.83	89.56	85.77	254.88	126.46	162.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	27.53	21.55	22.21	0.00	20.98	0.00	15.52	17.06
Movement LOS					C	C	C		C		B	B
d_A, Approach Delay [s/veh]	0.00				23.30				18.49			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	38.79											
Intersection LOS	D											
Intersection V/C	0.560											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	48	736	111	137	1263	65	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	48	736	111	137	1263	65	36
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	195	29	38	350	17	9
Total Analysis Volume [veh/h]	1	51	781	118	152	1401	69	37
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	48	48	48
g / C, Green / Cycle	0.29	0.29	0.29	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.09	0.16	0.38	0.38
s, saturation flow rate [veh/h]	377	3618	1275	964	1900	1867
c, Capacity [veh/h]	60	1043	368	336	759	745
d1, Uniform Delay [s]	59.98	38.74	33.47	26.64	34.89	35.15
k, delay calibration	0.04	0.04	0.04	0.04	0.28	0.38
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.62	0.41	0.19	0.36	15.25	20.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

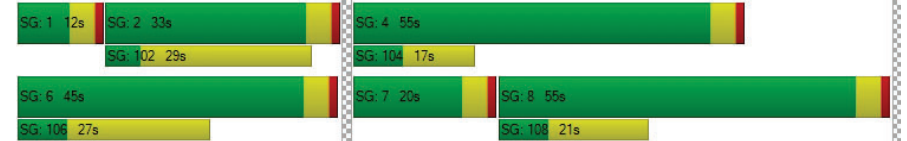
X, volume / capacity	0.85	0.75	0.32	0.45	0.95	0.96
d, Delay for Lane Group [s/veh]	71.60	39.15	33.66	27.00	50.14	56.09
Lane Group LOS	E	D	C	C	D	E
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.75	10.43	2.73	2.88	23.12	24.28
50th-Percentile Queue Length [ft/ln]	43.66	260.70	68.16	71.92	578.05	607.12
95th-Percentile Queue Length [veh/ln]	3.14	15.72	4.91	5.18	31.01	32.37
95th-Percentile Queue Length [ft/ln]	78.59	393.10	122.68	129.45	775.20	809.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	71.60	39.15	33.66	27.00	53.03	0.00	56.09
Movement LOS		E	D	C	C	D		E
d_A, Approach Delay [s/veh]	40.21			50.61				
Approach LOS	D			D				
d_I, Intersection Delay [s/veh]	38.79							
Intersection LOS	D							
Intersection V/C	0.560							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 63.9
 Level Of Service: E
 Volume to Capacity (v/c): 0.379

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	63	118	171	0	20	68	78	0	15	255	62	0	115	351	61
Base Volume Input [veh/h]	0	63	118	171	0	20	68	78	0	15	255	62	0	115	351	61
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	63	118	171	0	20	68	78	0	15	255	62	0	115	351	61
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	1.000	0.868	0.868	0.868	1.000	0.968	0.968	0.968
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	17	31	46	0	5	18	21	0	4	73	18	0	30	91	16
Total Analysis Volume [veh/h]	0	67	126	182	0	22	74	84	0	17	294	71	0	119	363	63
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.18	0.26	0.02	0.08	0.05	0.11	0.11	0.12
s, saturation flow rate [veh/h]	1248	1689	686	977	3618	1577	1102	1900	1784
c, Capacity [veh/h]	73	262	140	441	1709	745	514	898	843
d1, Uniform Delay [s]	50.02	42.26	41.79	19.72	15.15	14.57	20.11	15.72	15.76
k, delay calibration	0.04	0.08	0.28	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.26	85.98	155.26	0.16	0.22	0.25	1.05	0.64	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

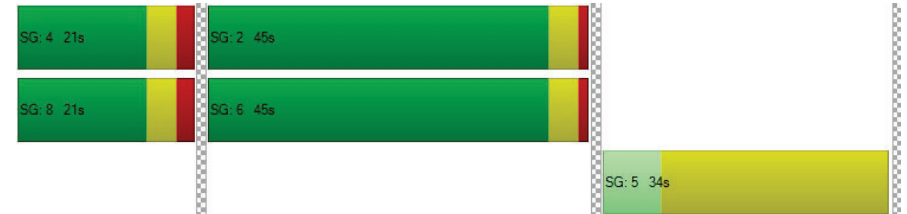
X, volume / capacity	0.92	1.18	1.29	0.04	0.17	0.10	0.23	0.24	0.25
d, Delay for Lane Group [s/veh]	65.28	128.24	197.05	19.89	15.37	14.83	21.17	16.36	16.46
Lane Group LOS	E	F	F	B	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.96	12.57	9.49	0.27	1.93	0.93	1.98	3.05	2.94
50th-Percentile Queue Length [ft/ln]	49.08	314.28	237.26	6.72	48.30	23.16	49.56	76.13	73.46
95th-Percentile Queue Length [veh/ln]	3.53	19.75	16.02	0.48	3.48	1.67	3.57	5.48	5.29
95th-Percentile Queue Length [ft/ln]	88.35	493.68	400.45	12.10	86.94	41.68	89.21	137.04	132.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.28	65.28	128.2	128.2	197.0	197.0	197.0	197.0	19.89	19.89	15.37	14.83	21.17	21.17	16.40	16.46
Movement LOS	E	E	F	F	F	F	F	F	B	B	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	116.99				197.05				15.47				17.45			
Approach LOS	F				F				B				B			
d_I, Intersection Delay [s/veh]	63.94															
Intersection LOS	E															
Intersection V/C	0.379															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 29.1
Level Of Service: C
Volume to Capacity (v/c): 0.387

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Base Volume Input [veh/h]	84	213	128	30	152	38	52	78	58	67	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	213	128	30	152	38	52	78	58	67	98	90
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	56	34	9	45	11	16	24	18	19	28	26
Total Analysis Volume [veh/h]	89	225	135	35	180	45	64	96	71	76	111	102
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	13	13	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	46	46
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.09	0.03	0.12	0.16	0.26
s, saturation flow rate [veh/h]	1174	1900	1545	1174	1814	1441	1100
c, Capacity [veh/h]	188	448	364	194	428	712	554
d1, Uniform Delay [s]	43.95	33.13	32.01	41.34	33.35	16.80	19.61
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	0.33	0.23	0.16	0.37	1.21	3.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

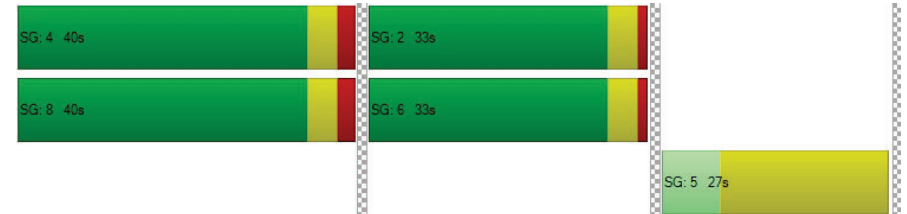
X, volume / capacity	0.47	0.50	0.37	0.18	0.53	0.32	0.52
d, Delay for Lane Group [s/veh]	44.64	33.46	32.24	41.51	33.72	18.01	23.10
Lane Group LOS	D	C	C	D	C	B	C
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.15	4.67	2.70	0.79	4.70	3.43	5.26
50th-Percentile Queue Length [ft/ln]	53.70	116.67	67.62	19.86	117.51	85.66	131.48
95th-Percentile Queue Length [veh/ln]	3.87	8.21	4.87	1.43	8.26	6.17	9.02
95th-Percentile Queue Length [ft/ln]	96.66	205.24	121.72	35.74	206.39	154.19	225.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.64	33.46	32.24	41.51	33.72	33.72	18.01	18.01	18.01	23.10	23.10	23.10
Movement LOS	D	C	C	D	C	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	35.31			34.77			18.01			23.10		
Approach LOS	D			C			B			C		
d_I, Intersection Delay [s/veh]	29.07											
Intersection LOS	C											
Intersection V/C	0.387											

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 80.3
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.007

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	75	206	177	68	145	67	78	133	68	59	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	206	177	68	145	67	78	133	68	59	165	199
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	58	50	19	40	19	21	36	18	17	47	57
Total Analysis Volume [veh/h]	84	232	199	76	161	74	84	144	74	68	190	229
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.25	0.07	0.13	0.76	0.05	0.68	0.14
s, saturation flow rate [veh/h]	1163	1900	800	1167	1767	301	1570	381	1581
c, Capacity [veh/h]	134	370	156	147	344	200	789	237	795
d1, Uniform Delay [s]	48.02	36.93	40.25	46.79	37.39	33.02	12.97	27.81	14.45
k, delay calibration	0.04	0.04	0.38	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.80	0.66	157.44	1.04	0.90	105.46	0.24	83.69	0.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

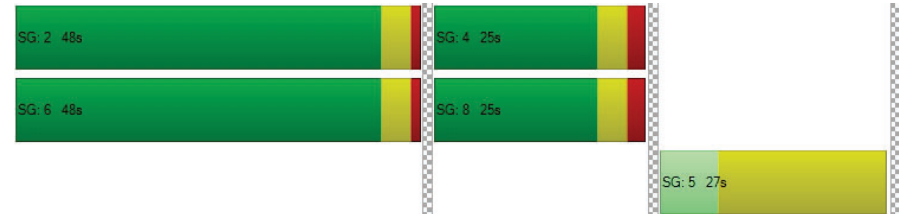
X, volume / capacity	0.63	0.63	1.28	0.52	0.68	1.14	0.09	1.09	0.29
d, Delay for Lane Group [s/veh]	49.82	37.58	197.69	47.84	38.29	138.47	13.20	111.50	15.36
Lane Group LOS	D	D	F	D	D	F	B	F	B
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.14	5.16	10.53	1.90	5.31	10.86	0.90	11.42	3.12
50th-Percentile Queue Length [ft/ln]	53.46	128.95	263.24	47.57	132.69	271.49	22.47	285.50	78.06
95th-Percentile Queue Length [veh/ln]	3.85	8.88	17.62	3.42	9.09	17.67	1.62	17.95	5.62
95th-Percentile Queue Length [ft/ln]	96.22	222.07	440.52	85.62	227.14	441.76	40.44	448.71	140.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.82	37.58	197.69	47.84	38.29	38.29	138.47	138.47	13.20	111.50	111.50	15.36
Movement LOS	D	D	F	D	D	D	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	101.44			40.62			107.78			66.30		
Approach LOS	F			D			F			E		
d_I, Intersection Delay [s/veh]	80.32											
Intersection LOS	F											
Intersection V/C	1.007											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.0
Level Of Service: C
Volume to Capacity (v/c): 0.270

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	Base Volume Input [veh/h]	43	205	92	68	165	38	69	135	94	61	147
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	205	92	68	165	38	69	135	94	61	147	192
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	61	27	18	44	10	18	35	25	18	42	55
Total Analysis Volume [veh/h]	51	243	109	73	176	41	72	141	98	70	170	222
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	22	22	22	22	46	46	46	46	46
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.46	0.46	0.46	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.07	0.06	0.12	0.06	0.14	0.06	0.09	0.14
s, saturation flow rate [veh/h]	1183	1900	1460	1155	1824	1234	1746	1159	1900	1561
c, Capacity [veh/h]	181	416	320	167	400	550	801	483	872	716
d1, Uniform Delay [s]	43.11	34.96	32.94	44.92	34.60	19.95	16.97	22.17	16.09	17.08
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.48	0.23	0.66	0.43	0.49	0.95	0.63	0.50	1.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

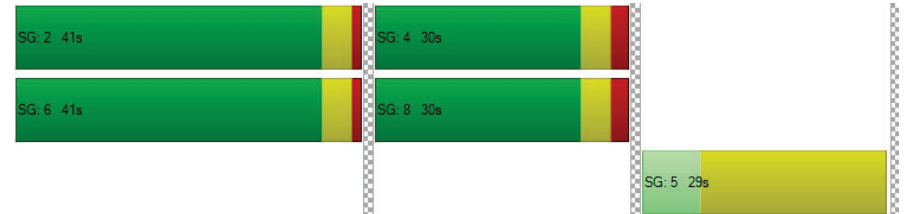
X, volume / capacity	0.28	0.58	0.34	0.44	0.54	0.13	0.30	0.14	0.20	0.31
d, Delay for Lane Group [s/veh]	43.42	35.44	33.18	45.58	35.03	20.44	17.92	22.80	16.59	18.20
Lane Group LOS	D	D	C	D	D	C	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.19	5.23	2.21	1.77	4.62	1.14	3.51	1.19	2.35	3.31
50th-Percentile Queue Length [ft/ln]	29.86	130.80	55.22	44.35	115.57	28.49	87.85	29.72	58.69	82.76
95th-Percentile Queue Length [veh/ln]	2.15	8.98	3.98	3.19	8.15	2.05	6.33	2.14	4.23	5.96
95th-Percentile Queue Length [ft/ln]	53.75	224.58	99.40	79.83	203.73	51.28	158.13	53.49	105.64	148.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.42	35.44	33.18	45.58	35.03	35.03	20.44	17.92	17.92	22.80	16.59	18.20
Movement LOS	D	D	C	D	D	D	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	35.84		37.69			18.51		18.30				
Approach LOS	D		D			B		B				
d_I, Intersection Delay [s/veh]	27.00											
Intersection LOS	C											
Intersection V/C	0.270											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 34.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.307

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	17	236	0	29	311	51	66	90	0	88	196
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	236	0	29	311	51	66	90	0	88	196	114
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	63	0	8	84	14	20	27	0	23	52	30
Total Analysis Volume [veh/h]	18	253	0	31	334	55	79	108	0	94	208	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	27	27	27	27	64	64
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.18	0.04	0.12	0.13
s, saturation flow rate [veh/h]	1042	1863	1863	1360	1862	1525
c, Capacity [veh/h]	97	423	423	308	986	808
d1, Uniform Delay [s]	56.79	41.49	43.69	37.36	15.12	15.22
k, delay calibration	0.04	0.04	0.27	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.51	8.05	0.10	0.55	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.60	0.79	0.18	0.23	0.24
d, Delay for Lane Group [s/veh]	57.13	42.00	51.74	37.47	15.67	15.94
Lane Group LOS	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.55	6.76	10.17	1.31	3.52	3.08
50th-Percentile Queue Length [ft/ln]	13.63	169.03	254.21	32.69	88.06	76.89
95th-Percentile Queue Length [veh/ln]	0.98	11.03	15.40	2.35	6.34	5.54
95th-Percentile Queue Length [ft/ln]	24.54	275.63	384.95	58.85	158.50	138.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.13	42.00	0.00	0.00	51.74	37.47	0.00	0.00	0.00	15.67	15.76	15.94
Movement LOS	E	D			D	D				B	B	B
d_A, Approach Delay [s/veh]	43.00		49.72		0.00		15.79					
Approach LOS	D		D		A		B					
d_I, Intersection Delay [s/veh]	34.79											
Intersection LOS	C											
Intersection V/C	0.307											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 25.0
Level Of Service: C
Volume to Capacity (v/c): 0.433

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	51	207	126	108	337	72	46	224	40	301	617	75
Base Volume Input [veh/h]	51	207	126	108	337	72	46	224	40	301	617	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	207	126	108	337	72	46	224	40	301	617	75
Peak Hour Factor	0.9142	0.9142	0.9142	0.8503	0.8503	0.8503	0.9531	0.9531	0.9531	0.9548	0.9548	0.9548
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	57	34	32	99	21	12	59	10	79	162	20
Total Analysis Volume [veh/h]	56	226	138	127	396	85	48	235	42	315	646	79
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	42	42	42	51	51	51	29	14	14	29	21	21
g / C, Green / Cycle	0.47	0.47	0.47	0.57	0.57	0.57	0.33	0.16	0.16	0.33	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.06	0.12	0.09	0.10	0.21	0.05	0.06	0.07	0.08	0.22	0.19	0.20
s, saturation flow rate [veh/h]	1000	1900	1549	1265	1900	1570	791	1900	1647	1424	1900	1773
c, Capacity [veh/h]	405	883	720	752	1083	895	324	306	266	505	451	421
d1, Uniform Delay [s]	21.72	14.64	14.16	9.25	10.53	8.81	22.66	34.21	34.54	24.95	32.49	32.74
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.07	0.09
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.70	0.59	0.49	0.96	0.21	0.08	0.40	0.57	5.71	2.59	3.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

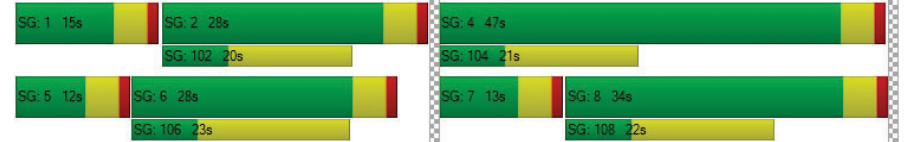
X, volume / capacity	0.14	0.26	0.19	0.17	0.37	0.09	0.15	0.46	0.51	0.62	0.82	0.84
d, Delay for Lane Group [s/veh]	22.43	15.33	14.75	9.74	11.48	9.02	22.74	34.61	35.11	30.66	35.08	36.69
Lane Group LOS	C	B	B	A	B	A	C	C	D	C	D	D
Critical Lane Group	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.90	2.80	1.67	1.14	4.11	0.74	0.68	2.75	2.70	6.03	7.64	7.56
50th-Percentile Queue Length [ft/ln]	22.39	70.06	41.80	28.62	102.72	18.47	17.07	68.67	67.52	150.68	191.08	188.98
95th-Percentile Queue Length [veh/ln]	1.61	5.04	3.01	2.06	7.40	1.33	1.23	4.94	4.86	10.05	12.18	12.07
95th-Percentile Queue Length [ft/ln]	40.31	126.11	75.25	51.52	184.89	33.25	30.72	123.60	121.54	251.34	304.43	301.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.43	15.33	14.75	9.74	11.48	9.02	22.74	34.81	35.11	30.66	35.77	36.69
Movement LOS	C	B	B	A	B	A	C	C	D	C	D	D
d_A, Approach Delay [s/veh]	16.09			10.77			33.07			34.29		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	24.95											
Intersection LOS	C											
Intersection V/C	0.433											

Sequence

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



Intersection Level Of Service Report

Intersection 29: FOURTH STREET/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 7.9
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.325

Intersection Setup

Name	4th St			4th St			California Ave			California Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			0.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			California Ave			California Ave		
	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Input [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Peak Hour Factor	0.8437	0.8437	0.8437	0.9285	0.9285	0.9285	0.8506	0.8506	0.8506	0.9047	0.9047	0.9047
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	59	16	3	48	5	6	48	14	7	34	15
Total Analysis Volume [veh/h]	72	235	63	13	193	18	26	194	56	28	136	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	62			70			38			61		
Bicycle Volume [bicycles/h]	22			16			7			12		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	25	25	25	25	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	30	30	30	30	30	30	30	30	30	30	30	30
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	17	17	17	17	17	17	15	15	15	15	15	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C
C, Cycle Length [s]	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	11	11	11	10	10
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.01	0.11	0.16	0.13
s, saturation flow rate [veh/h]	1152	1773	1053	1855	1755	1677
c, Capacity [veh/h]	493	653	420	683	715	692
d1, Uniform Delay [s]	9.89	7.44	10.59	6.98	8.09	7.87
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.19	0.01	0.09	0.13	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

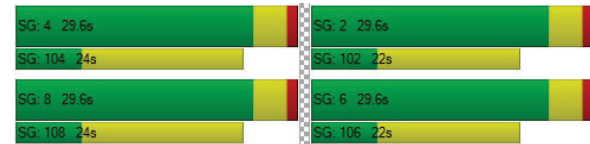
X, volume / capacity	0.15	0.46	0.03	0.31	0.39	0.32
d, Delay for Lane Group [s/veh]	9.94	7.62	10.60	7.08	8.22	7.97
Lane Group LOS	A	A	B	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	0.86	0.05	0.57	1.39	0.70
50th-Percentile Queue Length [ft/ln]	6.94	21.50	1.33	14.18	34.81	17.46
95th-Percentile Queue Length [veh/ln]	0.50	1.55	0.10	1.02	2.51	1.26
95th-Percentile Queue Length [ft/ln]	12.50	38.69	2.39	25.52	62.65	31.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.94	7.62	7.62	10.60	7.08	7.08	8.22	8.22	8.22	7.97	7.97	7.97
Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.07			7.28			8.22			7.97		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.93											
Intersection LOS	A											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 27.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.285

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	41	128	93	103	174	54	17	367	79	121	512	105
Base Volume Input [veh/h]	41	128	93	103	174	54	17	367	79	121	512	105
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	128	93	103	174	54	17	367	79	121	512	105
Peak Hour Factor	0.7730	0.7730	0.7730	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	41	30	28	47	15	5	98	21	33	141	29
Total Analysis Volume [veh/h]	53	166	120	111	187	58	18	390	84	133	565	116
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.08	0.09	0.10	0.04	0.02	0.11	0.05	0.11	0.18	0.19
s, saturation flow rate [veh/h]	1215	1900	1577	1239	1900	1581	771	3618	1579	1182	1900	1771
c, Capacity [veh/h]	176	368	306	192	368	307	210	1189	519	548	844	787
d1, Uniform Delay [s]	43.79	35.69	35.25	44.91	36.13	33.81	34.64	25.33	23.87	17.11	18.97	19.02
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.32	0.30	1.03	0.40	0.11	0.81	0.74	0.67	0.08	1.50	1.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

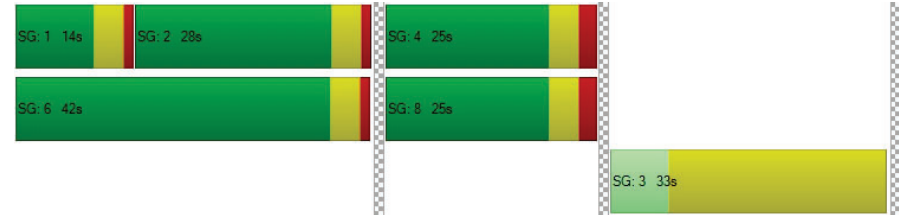
X, volume / capacity	0.30	0.45	0.39	0.58	0.51	0.19	0.09	0.33	0.16	0.24	0.42	0.42
d, Delay for Lane Group [s/veh]	44.14	36.01	35.56	45.93	36.53	33.92	35.44	26.07	24.54	17.19	20.47	20.67
Lane Group LOS	D	D	D	D	D	C	D	C	C	B	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.25	3.54	2.53	2.74	4.05	1.17	0.41	3.57	1.50	1.82	5.76	5.47
50th-Percentile Queue Length [ft/ln]	31.35	88.62	63.34	68.46	101.15	29.30	10.37	89.24	37.40	45.45	143.90	136.74
95th-Percentile Queue Length [veh/ln]	2.26	6.38	4.56	4.93	7.28	2.11	0.75	6.43	2.69	3.27	9.69	9.31
95th-Percentile Queue Length [ft/ln]	56.42	159.51	114.01	123.22	182.07	52.73	18.66	160.63	67.32	81.80	242.27	232.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.14	36.01	35.56	45.93	36.53	33.92	35.44	26.07	24.54	17.19	20.55	20.67
Movement LOS	D	D	D	D	D	C	D	C	C	B	C	C
d_A, Approach Delay [s/veh]	37.12			39.04			26.15			20.02		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	27.81											
Intersection LOS	C											
Intersection V/C	0.285											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 28.8
Level Of Service: C
Volume to Capacity (v/c): 0.343

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Base Volume Input [veh/h]	35	159	53	46	288	51	21	149	92	51	184
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	159	53	46	288	51	21	149	92	51	184	46
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	45	15	15	92	16	6	42	26	14	51	13
Total Analysis Volume [veh/h]	39	179	60	59	370	65	24	169	104	57	204	51
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	43	43	43	43	43	43	24
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.43	0.24
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.04	0.05	0.12	0.12	0.18
s, saturation flow rate [veh/h]	969	1900	1556	1224	1900	1783	1631
c, Capacity [veh/h]	399	824	675	507	824	773	437
d1, Uniform Delay [s]	22.84	17.71	16.68	21.81	18.16	18.22	34.44
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.09
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.61	0.26	0.47	0.80	0.88	1.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

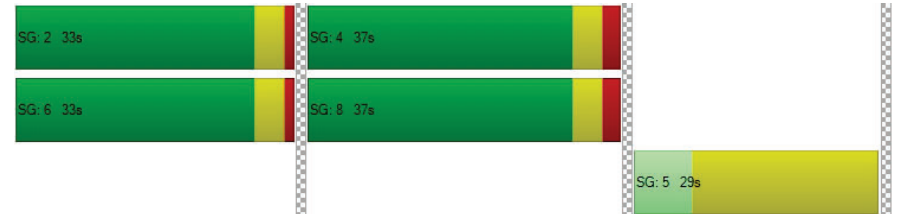
X, volume / capacity	0.10	0.22	0.09	0.12	0.27	0.28	0.68
d, Delay for Lane Group [s/veh]	23.33	18.32	16.94	22.27	18.97	19.10	36.07
Lane Group LOS	C	B	B	C	B	B	D
Critical Lane Group	No	No	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.67	2.63	0.84	0.98	3.35	3.25	6.70
50th-Percentile Queue Length [ft/ln]	16.87	65.82	20.91	24.55	83.84	81.13	167.55
95th-Percentile Queue Length [veh/ln]	1.21	4.74	1.51	1.77	6.04	5.84	10.95
95th-Percentile Queue Length [ft/ln]	30.37	118.47	37.64	44.19	150.92	146.04	273.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.33	18.32	16.94	22.27	19.02	19.10	36.07	36.07	36.07	45.65	45.65	45.65
Movement LOS	C	B	B	C	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	18.72		19.42			36.07			45.65			
Approach LOS	B		B			D			D			
d_I, Intersection Delay [s/veh]	28.78											
Intersection LOS	C											
Intersection V/C	0.343											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.266

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	58	174	77	67	306	30	0	273	123	0	349
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	174	77	67	306	30	0	273	123	0	349	68
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	53	23	18	83	8	0	74	33	0	99	19
Total Analysis Volume [veh/h]	70	211	93	72	330	32	0	295	133	0	397	77
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	52	52	52	52	52	52	18	18	18	18
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52	0.52	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.06	0.06	0.10	0.10	0.16	0.09	0.12	0.13
s, saturation flow rate [veh/h]	1036	1900	1583	1189	1900	1834	1900	1559	1900	1781
c, Capacity [veh/h]	533	992	827	592	992	958	333	273	333	312
d1, Uniform Delay [s]	16.50	12.84	12.12	16.86	12.63	12.85	40.26	37.18	38.86	39.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	0.49	0.28	0.42	0.41	0.43	3.19	0.50	1.06	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

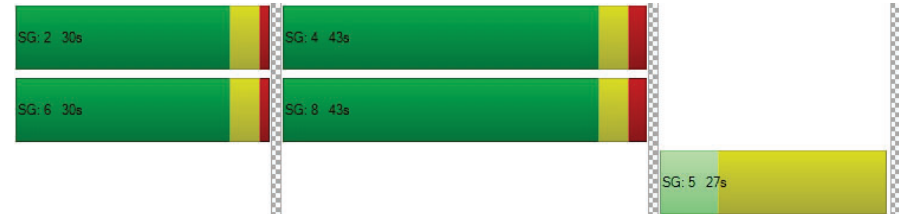
X, volume / capacity	0.13	0.21	0.11	0.12	0.18	0.19	0.89	0.49	0.71	0.76
d, Delay for Lane Group [s/veh]	17.01	13.33	12.40	17.28	13.04	13.08	43.45	37.68	39.92	40.68
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.00	2.54	1.07	1.03	2.17	2.13	7.29	2.95	5.52	5.60
50th-Percentile Queue Length [ft/ln]	24.95	63.59	26.65	25.70	54.19	53.21	182.22	73.76	138.04	140.01
95th-Percentile Queue Length [veh/ln]	1.80	4.58	1.92	1.85	3.90	3.83	11.72	5.31	9.38	9.48
95th-Percentile Queue Length [ft/ln]	44.90	114.47	47.97	46.27	97.54	95.78	292.91	132.76	234.38	237.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.01	13.33	12.40	17.28	13.06	13.08	0.00	43.45	37.68	0.00	40.22	40.68
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	13.79			13.76			41.65			40.30		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.10											
Intersection LOS	C											
Intersection V/C	0.266											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 38.9
Level Of Service: D
Volume to Capacity (v/c): 0.472

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	145	277	89	74	414	78	0	197	115	169	312
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	277	89	74	414	78	0	197	115	169	312	78
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	80	26	24	133	25	0	55	32	48	89	22
Total Analysis Volume [veh/h]	168	320	103	95	532	100	0	219	128	193	357	89
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	13	49	49	60	42	42	16	34	28	28	28
g / C, Green / Cycle	0.11	0.40	0.40	0.50	0.35	0.35	0.13	0.28	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.09	0.17	0.07	0.08	0.17	0.17	0.12	0.08	0.14	0.19	0.06
s, saturation flow rate [veh/h]	1810	1900	1568	1191	1900	1780	1900	1557	1406	1900	1563
c, Capacity [veh/h]	196	768	634	550	669	627	252	435	286	442	364
d1, Uniform Delay [s]	52.62	25.61	22.80	16.94	30.38	30.46	51.06	33.99	41.55	43.52	37.47
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.44	0.10	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.15	1.66	0.55	0.68	2.50	2.73	3.60	0.14	10.75	3.25	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

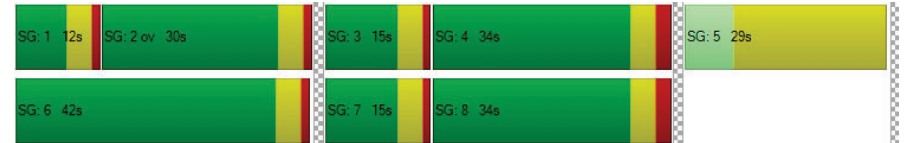
X, volume / capacity	0.86	0.42	0.16	0.17	0.48	0.49	0.87	0.29	0.67	0.81	0.24
d, Delay for Lane Group [s/veh]	56.77	27.27	23.34	17.62	32.88	33.19	54.66	34.12	52.30	46.77	37.60
Lane Group LOS	E	C	C	B	C	C	D	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.15	6.79	1.94	1.47	7.70	7.36	6.70	2.96	5.71	10.28	2.13
50th-Percentile Queue Length [ft/ln]	128.82	169.85	48.54	36.67	192.40	183.93	167.47	74.12	142.77	257.07	53.37
95th-Percentile Queue Length [veh/ln]	8.88	11.07	3.49	2.64	12.25	11.81	10.94	5.34	9.63	15.54	3.84
95th-Percentile Queue Length [ft/ln]	221.89	276.71	87.37	66.00	306.15	295.14	273.59	133.42	240.75	388.54	96.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.77	27.27	23.34	17.62	33.00	33.19	0.00	54.66	34.12	52.30	46.77	37.60
Movement LOS	E	C	C	B	C	C		D	C	D	D	D
d_A, Approach Delay [s/veh]	34.97			31.02			47.08			47.16		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	38.93											
Intersection LOS	D											
Intersection V/C	0.472											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 21.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.400

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T						T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	184	505	0	0	718	99	181	0	84	149	125
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	184	505	0	0	718	99	181	0	84	149	125	27
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	151	0	0	198	27	52	0	24	41	34	7
Total Analysis Volume [veh/h]	220	604	0	0	792	109	208	0	96	164	137	30
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	77	77	65	65	14	14
g / C, Green / Cycle	0.64	0.64	0.54	0.54	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.28	0.17	0.24	0.25	0.10	0.10
s, saturation flow rate [veh/h]	793	3618	1900	1801	1814	1664
c, Capacity [veh/h]	500	2328	1020	967	205	188
d1, Uniform Delay [s]	11.03	9.15	16.87	17.16	52.19	52.19
k, delay calibration	0.29	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.64	0.27	1.39	1.61	3.60	3.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.26	0.44	0.47	0.84	0.84
d, Delay for Lane Group [s/veh]	12.67	9.42	18.26	18.78	55.79	56.09
Lane Group LOS	B	A	B	B	E	E
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.48	3.35	7.66	7.83	5.34	4.91
50th-Percentile Queue Length [ft/ln]	61.99	83.66	191.56	195.71	133.54	122.85
95th-Percentile Queue Length [veh/ln]	4.46	6.02	12.20	12.42	9.13	8.55
95th-Percentile Queue Length [ft/ln]	111.58	150.59	305.05	310.42	228.30	213.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.67	9.42	0.00	0.00	18.48	18.78	0.00	0.00	0.00	55.79	56.07	56.09
Movement LOS	B	A			B	B				E	E	E
d_A, Approach Delay [s/veh]	10.29		18.52		0.00		55.93					
Approach LOS	B		B		A		E					
d_I, Intersection Delay [s/veh]	21.24											
Intersection LOS	C											
Intersection V/C	0.400											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		Westbound	
Base Volume Input [veh/h]	300	0	0	882	852	406
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	300	0	0	882	852	406
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	0	0	249	234	111
Total Analysis Volume [veh/h]	343	0	0	998	936	446
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	36	36
g / C, Green / Cycle	0.62	0.62	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.09	0.28	0.27	0.28
s, saturation flow rate [veh/h]	3618	3618	3514	1586
c, Capacity [veh/h]	2244	2244	1064	480
d1, Uniform Delay [s]	9.54	11.93	39.69	40.50
k, delay calibration	0.50	0.50	0.04	0.23
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.64	0.97	14.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

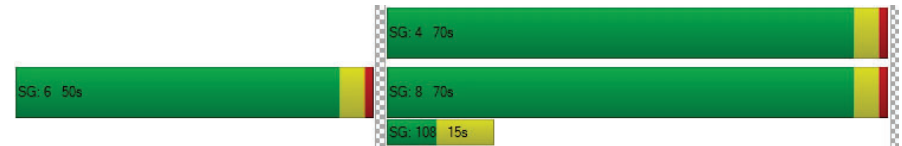
X, volume / capacity	0.15	0.44	0.88	0.93
d, Delay for Lane Group [s/veh]	9.68	12.57	40.66	55.48
Lane Group LOS	A	B	D	E
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.90	6.94	12.38	13.90
50th-Percentile Queue Length [ft/ln]	47.43	173.41	309.52	347.53
95th-Percentile Queue Length [veh/ln]	3.42	11.26	18.15	20.02
95th-Percentile Queue Length [ft/ln]	85.38	281.39	453.79	500.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.68	0.00	0.00	12.57	40.66	55.48
Movement LOS	A			B	D	E
d_A, Approach Delay [s/veh]	9.68		12.57		45.44	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]	28.89					
Intersection LOS	C					
Intersection V/C	0.557					

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.0
Level Of Service: C
Volume to Capacity (v/c): 0.542

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	TTT			TTT			TTT					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	14	271	190	307	1218	154	29	357	60	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	271	190	307	1218	154	29	357	60	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	69	49	86	340	43	9	107	18	0	0	0
Total Analysis Volume [veh/h]	14	277	194	343	1361	172	35	427	72	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	23	23	68	89	89	15	15	15
g / C, Green / Cycle	0.02	0.19	0.19	0.57	0.75	0.75	0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.01	0.15	0.11	0.10	0.40	0.43	0.10	0.10	0.11
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1782	1883	1729	1584
c, Capacity [veh/h]	29	369	350	1992	1416	1328	233	214	196
d1, Uniform Delay [s]	58.51	45.55	43.61	12.45	6.52	6.80	51.24	51.22	51.48
k, delay calibration	0.04	0.16	0.04	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.70	4.58	0.51	0.02	1.50	1.82	2.77	2.96	4.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.75	0.55	0.17	0.54	0.58	0.82	0.82	0.86
d, Delay for Lane Group [s/veh]	63.20	50.13	44.12	12.47	8.02	8.62	54.02	54.18	55.58
Lane Group LOS	E	D	D	B	A	A	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.46	8.24	5.26	2.20	7.81	8.16	5.74	5.26	5.11
50th-Percentile Queue Length [ft/ln]	11.49	205.98	131.49	54.95	195.24	204.00	143.40	131.44	127.73
95th-Percentile Queue Length [veh/ln]	0.83	12.95	9.02	3.96	12.39	12.84	9.66	9.02	8.82
95th-Percentile Queue Length [ft/ln]	20.68	323.67	225.51	98.91	309.81	321.12	241.60	225.45	220.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.20	50.13	44.12	12.47	8.28	8.62	54.02	54.44	55.58	0.00	0.00	0.00
Movement LOS	E	D	D	B	A	A	D	D	E			
d_A, Approach Delay [s/veh]	48.11			9.08			54.56			0.00		
Approach LOS	D			A			D			A		
d_I, Intersection Delay [s/veh]	24.01											
Intersection LOS	C											
Intersection V/C	0.542											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.384

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	82	259	119	35	60	27	26	498	44	56	636	110
Base Volume Input [veh/h]	82	259	119	35	60	27	26	498	44	56	636	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	259	119	35	60	27	26	498	44	56	636	110
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	72	33	9	16	7	7	130	11	15	170	29
Total Analysis Volume [veh/h]	91	287	132	37	63	28	27	520	46	60	681	118
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	26	61	61	61	61	61	61
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.08	0.15	0.09	0.03	0.05	0.04	0.14	0.03	0.07	0.22	0.23
s, saturation flow rate [veh/h]	1169	1900	1454	1067	1684	685	3618	1422	872	1900	1673
c, Capacity [veh/h]	301	490	375	186	434	392	2206	867	525	1159	1020
d1, Uniform Delay [s]	35.03	32.35	30.21	41.22	29.04	14.77	8.87	7.85	12.38	9.68	9.90
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.42	0.21	0.19	0.09	0.34	0.25	0.12	0.44	0.85	1.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

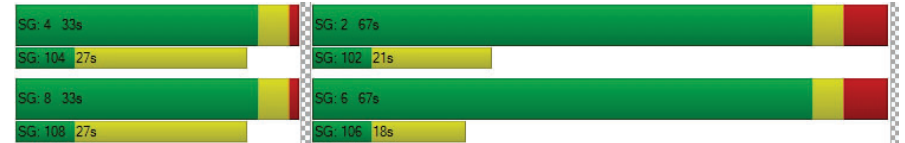
X, volume / capacity	0.30	0.59	0.35	0.20	0.21	0.07	0.24	0.05	0.11	0.35	0.38
d, Delay for Lane Group [s/veh]	35.23	32.77	30.42	41.41	29.12	15.10	9.12	7.97	12.82	10.53	10.98
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.91	5.96	2.56	0.84	1.69	0.37	2.49	0.41	0.74	4.43	4.34
50th-Percentile Queue Length [ft/ln]	47.81	149.04	63.94	21.00	42.27	9.29	62.26	10.15	18.46	110.63	108.47
95th-Percentile Queue Length [veh/ln]	3.44	9.97	4.60	1.51	3.04	0.67	4.48	0.73	1.33	7.88	7.75
95th-Percentile Queue Length [ft/ln]	86.06	249.15	115.09	37.80	76.09	16.73	112.07	18.26	33.22	196.88	193.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.23	32.77	30.42	41.41	29.12	29.12	15.10	9.12	7.97	12.82	10.71	10.98
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	32.60			32.68			9.30		10.90			
Approach LOS	C			C			A		B			
d_I, Intersection Delay [s/veh]	17.07											
Intersection LOS	B											
Intersection V/C	0.384											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 20.7
Level Of Service: C
Volume to Capacity (v/c): 0.291

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Base Volume Input [veh/h]	77	360	34	8	72	33	20	220	21	19	172
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	360	34	8	72	33	20	220	21	19	172	28
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	98	9	2	21	10	6	64	6	6	52	8
Total Analysis Volume [veh/h]	84	392	37	9	85	39	23	255	24	23	207	34
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	68	68	68	68	68	23	23
g / C, Green / Cycle	0.68	0.68	0.68	0.68	0.68	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.12	0.01	0.07	0.17	0.16
s, saturation flow rate [veh/h]	1223	1900	1807	957	1721	1741	1674
c, Capacity [veh/h]	842	1292	1229	657	1170	436	421
d1, Uniform Delay [s]	7.36	5.78	5.80	7.60	5.51	35.82	34.98
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.28	0.31	0.04	0.18	1.99	1.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

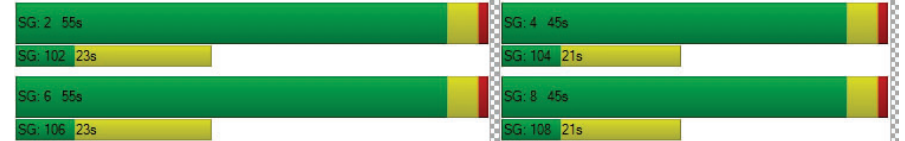
X, volume / capacity	0.10	0.17	0.17	0.01	0.11	0.69	0.63
d, Delay for Lane Group [s/veh]	7.60	6.06	6.10	7.64	5.70	37.80	36.52
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.70	1.51	1.49	0.08	0.83	6.91	5.88
50th-Percentile Queue Length [ft/ln]	17.54	37.87	37.24	1.91	20.76	172.84	146.91
95th-Percentile Queue Length [veh/ln]	1.26	2.73	2.68	0.14	1.49	11.23	9.85
95th-Percentile Queue Length [ft/ln]	31.58	68.16	67.03	3.45	37.36	280.64	246.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.60	6.08	6.10	7.64	5.70	5.70	37.80	37.80	37.80	36.52	36.52	36.52
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	6.33			5.83			37.80			36.52		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	20.69											
Intersection LOS	C											
Intersection V/C	0.291											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.356

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	122	386	91	58	93	25	29	357	30	45	297
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	386	91	58	93	25	29	357	30	45	297	39
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8552	0.8552	0.8552	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	110	26	16	26	7	8	104	9	14	93	12
Total Analysis Volume [veh/h]	139	440	104	65	105	28	34	417	35	56	371	49
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	26	61	61	61	61	61	61
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.12	0.15	0.16	0.07	0.08	0.03	0.12	0.12	0.06	0.20	0.03
s, saturation flow rate [veh/h]	1178	1900	1644	867	1741	1000	1900	1797	916	1900	1411
c, Capacity [veh/h]	279	500	433	154	458	567	1149	1087	561	1149	853
d1, Uniform Delay [s]	38.47	31.83	32.31	44.24	29.38	13.19	8.87	8.92	11.57	9.70	8.09
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	0.37	0.52	0.68	0.13	0.20	0.39	0.43	0.36	0.75	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.56	0.61	0.42	0.29	0.06	0.20	0.21	0.10	0.32	0.06
d, Delay for Lane Group [s/veh]	38.98	32.20	32.83	44.92	29.50	13.39	9.26	9.35	11.93	10.45	8.22
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.16	5.76	5.52	1.58	2.52	0.42	2.22	2.19	0.65	3.96	0.44
50th-Percentile Queue Length [ft/ln]	78.96	144.10	137.91	39.44	62.94	10.58	55.47	54.80	16.36	98.99	11.01
95th-Percentile Queue Length [veh/ln]	5.68	9.70	9.37	2.84	4.53	0.76	3.99	3.95	1.18	7.13	0.79
95th-Percentile Queue Length [ft/ln]	142.12	242.53	234.20	70.99	113.30	19.04	99.84	98.63	29.45	178.18	19.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.98	32.43	32.83	44.92	29.50	29.50	13.39	9.30	9.35	11.93	10.45	8.22
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	A
d_A, Approach Delay [s/veh]	33.82			34.56			9.59			10.39		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	21.46											
Intersection LOS	C											
Intersection V/C	0.356											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.3
Level Of Service: C
Volume to Capacity (v/c): 0.359

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	125	451	80	32	51	80	100	239	34	18	343	43
Base Volume Input [veh/h]	125	451	80	32	51	80	100	239	34	18	343	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	451	80	32	51	80	100	239	34	18	343	43
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	118	21	9	14	22	27	64	9	5	95	12
Total Analysis Volume [veh/h]	131	473	84	36	57	89	106	254	36	20	379	48
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	23	68	68	68	68	68
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.68	0.68	0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.16	0.04	0.09	0.11	0.16	0.02	0.20	0.03
s, saturation flow rate [veh/h]	1213	1900	1707	856	1573	998	1827	1070	1900	1447
c, Capacity [veh/h]	232	436	391	128	361	647	1240	710	1289	982
d1, Uniform Delay [s]	42.22	34.94	35.32	45.60	32.73	10.03	6.14	8.31	6.45	5.34
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.80	0.63	0.83	0.44	0.27	0.54	0.44	0.07	0.58	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.65	0.69	0.28	0.40	0.16	0.23	0.03	0.29	0.05
d, Delay for Lane Group [s/veh]	43.02	35.57	36.15	46.04	33.00	10.58	6.58	8.38	7.03	5.43
Lane Group LOS	D	D	D	D	C	B	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.14	6.22	6.01	0.87	2.97	1.12	2.15	0.18	2.96	0.31
50th-Percentile Queue Length [ft/ln]	78.42	155.53	150.17	21.87	74.34	28.06	53.83	4.49	73.89	7.85
95th-Percentile Queue Length [veh/ln]	5.65	10.31	10.03	1.57	5.35	2.02	3.88	0.32	5.32	0.56
95th-Percentile Queue Length [ft/ln]	141.16	257.79	250.66	39.37	133.81	50.51	96.89	8.08	133.01	14.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.02	35.80	36.15	46.04	33.00	33.00	10.58	6.58	6.58	8.38	7.03	5.43
Movement LOS	D	D	D	D	C	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.21			35.58			7.65			6.92		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	22.30											
Intersection LOS	C											
Intersection V/C	0.359											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 21.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.387

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	14	617	34	13	19	79	0	0	0	6	207
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	617	34	13	19	79	0	0	0	6	207	56
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	170	9	4	6	23	0	0	0	2	68	19
Total Analysis Volume [veh/h]	15	679	37	15	22	93	0	0	0	6	274	74
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	42	42	2	49	40
g / C, Green / Cycle	0.42	0.42	0.02	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.19	0.03	0.01	0.07	0.19
s, saturation flow rate [veh/h]	3618	1359	1810	1602	1822
c, Capacity [veh/h]	1531	575	43	790	738
d1, Uniform Delay [s]	20.48	17.10	48.02	13.84	21.88
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.93	0.22	1.76	0.39	2.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

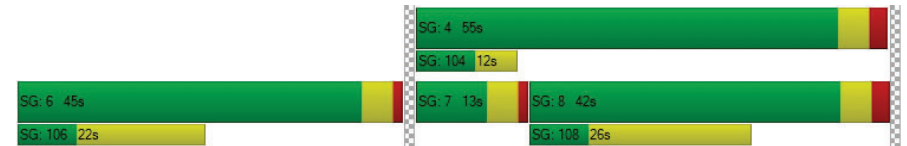
X, volume / capacity	0.44	0.06	0.35	0.15	0.47
d, Delay for Lane Group [s/veh]	21.41	17.32	49.78	14.23	24.04
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.68	0.53	0.38	1.44	6.32
50th-Percentile Queue Length [ft/ln]	142.10	13.34	9.60	36.06	157.92
95th-Percentile Queue Length [veh/ln]	9.59	0.96	0.69	2.60	10.44
95th-Percentile Queue Length [ft/ln]	239.85	24.01	17.29	64.92	260.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	21.41	17.32	49.78	14.23	14.23	0.00	0.00	0.00	0.00	24.04	24.04
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		21.20		18.33		0.00				24.04		
Approach LOS		C		B		A				C		
d_I, Intersection Delay [s/veh]		21.72										
Intersection LOS		C										
Intersection V/C		0.387										

Sequence

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



Intersection Level Of Service Report
Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 19.6
Level Of Service: B
Volume to Capacity (v/c): 0.350

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Base Volume Input [veh/h]	15	139	36	36	133	21	32	253	33	30	151
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	139	36	36	133	21	32	253	33	30	151	26
Peak Hour Factor	0.8796	0.8796	0.8796	0.8333	0.8333	0.8333	0.9034	0.9034	0.9034	0.8483	0.8483	0.8483
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	40	10	11	40	6	9	70	9	9	45	8
Total Analysis Volume [veh/h]	17	158	41	43	160	25	35	280	37	35	178	31
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	72	72	72
g / C, Green / Cycle	0.19	0.19	0.72	0.72	0.72
(v / s)_i Volume / Saturation Flow Rate	0.13	0.15	0.20	0.13	0.02
s, saturation flow rate [veh/h]	1707	1495	1785	1656	1575
c, Capacity [veh/h]	355	320	1329	1238	1138
d1, Uniform Delay [s]	37.75	38.78	4.75	4.33	3.93
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	1.11	0.49	0.30	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.71	0.26	0.17	0.03
d, Delay for Lane Group [s/veh]	38.37	39.89	5.24	4.64	3.97
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.86	5.37	2.18	1.21	0.16
50th-Percentile Queue Length [ft/ln]	121.48	134.21	54.52	30.22	3.99
95th-Percentile Queue Length [veh/ln]	8.47	9.17	3.93	2.18	0.29
95th-Percentile Queue Length [ft/ln]	211.85	229.21	98.13	54.40	7.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.37	38.37	38.37	39.89	39.89	39.89	5.24	5.24	5.24	4.64	4.64	3.97
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	38.37			39.89			5.24			4.55		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.55											
Intersection LOS	B											
Intersection V/C	0.350											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.2
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.375

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	10	87	38	80	94	31	32	441	30	57	345	51
Base Volume Input [veh/h]	10	87	38	80	94	31	32	441	30	57	345	51
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	87	38	80	94	31	32	441	30	57	345	51
Peak Hour Factor	0.8437	0.8437	0.8437	0.7884	0.7884	0.7884	0.9314	0.9314	0.9314	0.9359	0.9359	0.9359
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	26	11	25	30	10	9	118	8	15	92	14
Total Analysis Volume [veh/h]	12	103	45	101	119	39	34	473	32	61	369	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	21	21	21	21	65	65	65	65	65	65
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.09	0.10	0.04	0.28	0.02	0.07	0.22	0.04
s, saturation flow rate [veh/h]	1082	1588	1106	1599	917	1710	1375	839	1710	1352
c, Capacity [veh/h]	186	340	194	343	568	1118	899	495	1118	884
d1, Uniform Delay [s]	40.45	34.02	43.49	34.23	10.96	8.29	6.14	13.27	7.65	6.25
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.33	0.80	0.36	0.20	1.18	0.07	0.51	0.79	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.43	0.52	0.46	0.06	0.42	0.04	0.12	0.33	0.06
d, Delay for Lane Group [s/veh]	40.51	34.34	44.29	34.59	11.16	9.46	6.21	13.78	8.44	6.38
Lane Group LOS	D	C	D	C	B	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.27	3.08	2.44	3.31	0.38	4.77	0.24	0.79	3.42	0.41
50th-Percentile Queue Length [ft/ln]	6.66	77.08	61.04	82.83	9.52	119.28	5.98	19.68	85.41	10.29
95th-Percentile Queue Length [veh/ln]	0.48	5.55	4.40	5.96	0.69	8.35	0.43	1.42	6.15	0.74
95th-Percentile Queue Length [ft/ln]	11.99	138.75	109.88	149.10	17.13	208.84	10.77	35.42	153.74	18.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.51	34.34	34.34	44.29	34.59	34.59	11.16	9.46	6.21	13.78	8.44	6.38
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.80			38.37			9.38			8.88		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	17.24											
Intersection LOS	B											
Intersection V/C	0.375											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 19.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.323

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TT			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	27	198	28	40	141	26	18	266	31	26	182	34
Base Volume Input [veh/h]	27	198	28	40	141	26	18	266	31	26	182	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	198	28	40	141	26	18	266	31	26	182	34
Peak Hour Factor	0.9166	0.9166	0.9166	0.8625	0.8625	0.8625	0.8118	0.8118	0.8118	0.8521	0.8521	0.8521
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	54	8	12	41	8	6	82	10	8	53	10
Total Analysis Volume [veh/h]	29	216	31	46	163	30	22	328	38	31	214	40
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	21	21	21	21	70	70	70
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.70	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.04	0.11	0.19	0.02	0.16
s, saturation flow rate [veh/h]	1157	1840	1136	1799	1853	1573	1737
c, Capacity [veh/h]	175	386	142	377	1332	1098	1253
d1, Uniform Delay [s]	42.54	36.05	45.89	34.96	5.58	4.66	5.38
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.66	0.49	0.40	0.48	0.06	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.64	0.32	0.51	0.26	0.03	0.23
d, Delay for Lane Group [s/veh]	42.70	36.72	46.38	35.36	6.06	4.72	5.80
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.68	5.57	1.14	4.21	2.44	0.22	1.92
50th-Percentile Queue Length [ft/ln]	17.03	139.31	28.53	105.26	61.01	5.58	48.11
95th-Percentile Queue Length [veh/ln]	1.23	9.44	2.05	7.58	4.39	0.40	3.46
95th-Percentile Queue Length [ft/ln]	30.65	236.10	51.36	189.39	109.82	10.05	86.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.70	36.72	36.72	46.38	35.36	35.36	6.06	6.06	4.72	5.80	5.80	5.80
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.35			37.48			5.93			5.80		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.54											
Intersection LOS	B											
Intersection V/C	0.323											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.7
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.352

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	34	145	33	85	133	30	30	523	37	24	427
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	145	33	85	133	30	30	523	37	24	427	61
Peak Hour Factor	0.8983	0.8983	0.8983	0.7948	0.7948	0.7948	0.9768	0.9768	0.9768	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	40	9	27	42	9	8	134	9	6	113	16
Total Analysis Volume [veh/h]	38	161	37	107	167	38	31	535	38	26	454	65
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	23	23	23	23	64	64	64	64	64	64
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.09	0.11	0.03	0.15	0.15	0.03	0.24	0.04
s, saturation flow rate [veh/h]	1178	1823	1188	1820	947	1900	1844	847	1900	1552
c, Capacity [veh/h]	198	417	204	416	554	1215	1179	543	1215	992
d1, Uniform Delay [s]	41.16	33.36	43.39	33.51	12.45	7.67	7.68	10.16	8.54	6.78
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.31	0.78	0.34	0.19	0.46	0.48	0.17	0.88	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.48	0.52	0.49	0.06	0.24	0.24	0.05	0.37	0.07
d, Delay for Lane Group [s/veh]	41.33	33.68	44.17	33.85	12.64	8.13	8.16	10.33	9.42	6.91
Lane Group LOS	D	C	D	C	B	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.88	4.21	2.63	4.38	0.37	2.59	2.55	0.28	4.55	0.52
50th-Percentile Queue Length [ft/ln]	21.97	105.15	65.87	109.39	9.34	64.69	63.64	6.96	113.66	12.96
95th-Percentile Queue Length [veh/ln]	1.58	7.57	4.74	7.81	0.67	4.66	4.58	0.50	8.04	0.93
95th-Percentile Queue Length [ft/ln]	39.55	189.23	118.57	195.15	16.82	116.43	114.55	12.52	201.07	23.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.33	33.68	33.68	44.17	33.85	33.85	12.64	8.14	8.16	10.33	9.42	6.91
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.91			37.39			8.38			9.16		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	17.65											
Intersection LOS	B											
Intersection V/C	0.352											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.435

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	205	407	258	36	266	32	20	589	155	119	632	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	205	407	258	36	266	32	20	589	155	119	632	41
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	108	68	11	83	10	5	154	41	32	168	11
Total Analysis Volume [veh/h]	217	431	273	45	331	40	21	617	162	127	673	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.17	0.23	0.18	0.05	0.10	0.10	0.03	0.17	0.11	0.13	0.19	0.03
s, saturation flow rate [veh/h]	1249	1900	1525	959	1900	1807	759	3618	1488	987	3618	1443
c, Capacity [veh/h]	458	670	538	92	442	420	316	1595	656	563	2008	801
d1, Uniform Delay [s]	24.29	27.09	25.51	49.56	32.67	32.76	23.72	18.84	17.53	11.41	12.16	10.21
k, delay calibration	0.49	0.13	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.25	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.41	1.24	0.28	1.51	0.24	0.26	0.41	0.71	0.90	0.47	0.45	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.64	0.51	0.49	0.42	0.44	0.07	0.39	0.25	0.23	0.34	0.05
d, Delay for Lane Group [s/veh]	27.70	28.33	25.78	51.08	32.91	33.02	24.13	19.55	18.43	11.88	12.61	10.34
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.15	8.64	5.06	1.15	3.82	3.74	0.38	4.86	2.46	1.34	3.95	0.45
50th-Percentile Queue Length [ft/ln]	103.78	215.93	126.38	28.72	95.54	93.43	9.53	121.61	61.61	33.47	98.86	11.23
95th-Percentile Queue Length [veh/ln]	7.47	13.46	8.74	2.07	6.88	6.73	0.69	8.48	4.44	2.41	7.12	0.81
95th-Percentile Queue Length [ft/ln]	186.81	336.42	218.57	51.69	171.97	168.18	17.15	212.03	110.89	60.24	177.96	20.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.70	28.33	25.78	51.08	32.96	33.02	24.13	19.55	18.43	11.88	12.61	10.34
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	27.42		34.92				19.44		12.38			
Approach LOS	C		C				B		B			
d_I, Intersection Delay [s/veh]	22.07											
Intersection LOS	C											
Intersection V/C	0.435											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 29.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.700

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	84	809	75	33	513	23	15	188	162	42	134	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	84	809	75	33	513	23	15	188	162	42	134	38
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	213	20	10	152	7	4	50	43	11	37	10
Total Analysis Volume [veh/h]	89	853	79	39	607	27	16	200	172	46	146	42
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	54	54	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.54	0.54	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.09	0.25	0.25	0.05	0.17	0.17	0.22	0.12	0.44	0.03
s, saturation flow rate [veh/h]	948	1900	1820	747	1900	1861	997	1461	438	1508
c, Capacity [veh/h]	637	1033	989	493	999	978	310	398	164	410
d1, Uniform Delay [s]	7.45	13.88	13.94	7.95	13.52	13.54	30.72	30.02	32.66	27.24
k, delay calibration	0.07	0.50	0.50	0.50	0.50	0.50	0.19	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	1.46	1.57	0.31	0.84	0.87	4.92	0.28	124.29	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.46	0.46	0.08	0.32	0.32	0.70	0.43	1.17	0.10
d, Delay for Lane Group [s/veh]	7.51	15.34	15.50	8.26	14.36	14.41	35.65	30.29	156.94	27.28
Lane Group LOS	A	B	B	A	B	B	D	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.69	6.60	6.46	0.33	4.19	4.15	4.59	3.36	8.71	0.74
50th-Percentile Queue Length [ft/ln]	17.27	165.12	161.51	8.31	104.78	103.65	114.67	84.01	217.86	18.56
95th-Percentile Queue Length [veh/ln]	1.24	10.82	10.63	0.60	7.54	7.46	8.10	6.05	14.67	1.34
95th-Percentile Queue Length [ft/ln]	31.09	270.49	265.72	14.95	188.60	186.56	202.48	151.22	366.87	33.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.51	15.41	15.50	8.26	14.39	14.41	35.65	35.65	30.29	156.94	156.94	27.28
Movement LOS	A	B	B	A	B	B	D	D	C	F	F	C
d_A, Approach Delay [s/veh]	14.73			14.03			33.27			133.67		
Approach LOS	B			B			C			F		
d_I, Intersection Delay [s/veh]	29.65											
Intersection LOS	C											
Intersection V/C	0.700											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 26.4
 Level Of Service: C
 Volume to Capacity (v/c): 0.555

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	93	829	141	117	621	27	33	405	166	118	357	107
Base Volume Input [veh/h]	93	829	141	117	621	27	33	405	166	118	357	107
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	829	141	117	621	27	33	405	166	118	357	107
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	213	36	31	164	7	9	113	46	32	98	29
Total Analysis Volume [veh/h]	96	852	145	124	657	29	37	450	185	130	393	118
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	55	43	43	55	44	44	25	25	25	36	36	36
g / C, Green / Cycle	0.55	0.43	0.43	0.55	0.44	0.44	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.10	0.27	0.27	0.16	0.18	0.18	0.04	0.17	0.19	0.12	0.21	0.08
s, saturation flow rate [veh/h]	941	1900	1772	787	1900	1860	982	1900	1593	1068	1900	1452
c, Capacity [veh/h]	528	822	766	416	828	810	127	469	393	348	687	525
d1, Uniform Delay [s]	11.72	22.03	22.19	13.91	19.48	19.51	46.30	34.39	35.03	23.94	25.72	22.20
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.04	0.07	0.12	0.22	0.07	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	3.53	3.97	1.82	1.55	1.60	0.47	1.36	3.47	1.33	0.48	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.62	0.63	0.30	0.42	0.42	0.29	0.71	0.77	0.37	0.57	0.22
d, Delay for Lane Group [s/veh]	11.90	25.56	26.16	15.74	21.03	21.11	46.77	35.75	38.50	25.27	26.19	22.28
Lane Group LOS	B	C	C	B	C	C	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.01	9.82	9.47	1.51	5.76	5.70	0.91	7.44	7.12	2.21	7.45	1.92
50th-Percentile Queue Length [ft/ln]	25.27	245.39	236.84	37.63	144.12	142.48	22.83	185.89	177.90	55.20	186.20	47.97
95th-Percentile Queue Length [veh/ln]	1.82	14.95	14.52	2.71	9.70	9.61	1.64	11.91	11.49	3.97	11.92	3.45
95th-Percentile Queue Length [ft/ln]	45.48	373.85	363.03	67.73	242.57	240.37	41.09	297.69	287.27	99.37	298.09	86.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.90	25.80	26.16	15.74	21.07	21.11	46.77	36.47	38.50	25.27	26.19	22.28
Movement LOS	B	C	C	B	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	24.63			20.25			37.59			25.29		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	26.37											
Intersection LOS	C											
Intersection V/C	0.555											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.6
Level Of Service: C
Volume to Capacity (v/c): 0.574

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
	103	939	177	29	804	37	49	240	126	96	267	77
Base Volume Input [veh/h]	103	939	177	29	804	37	49	240	126	96	267	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	939	177	29	804	37	49	240	126	96	267	77
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	255	48	8	219	10	13	62	33	26	72	21
Total Analysis Volume [veh/h]	112	1018	192	32	875	40	51	249	130	104	288	83
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	8	51	51	39	39	39	26	26	26	35	35
g / C, Green / Cycle	0.08	0.51	0.51	0.39	0.39	0.39	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.06	0.33	0.35	0.07	0.24	0.25	0.05	0.13	0.10	0.27	0.06
s, saturation flow rate [veh/h]	1810	1900	1700	469	1900	1842	1108	1900	1352	1431	1366
c, Capacity [veh/h]	141	978	876	125	743	720	72	488	347	507	482
d1, Uniform Delay [s]	45.32	17.46	18.01	42.12	24.47	24.60	50.00	31.78	30.55	28.07	22.28
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.82	3.12	4.13	4.84	3.87	4.15	4.58	0.31	0.25	10.95	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

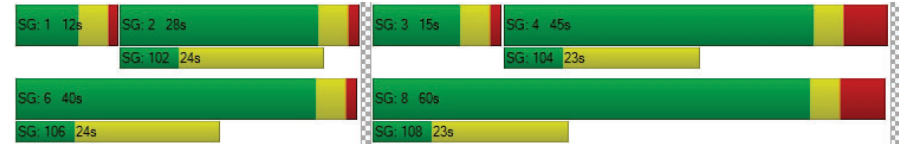
X, volume / capacity	0.80	0.63	0.67	0.25	0.62	0.63	0.70	0.51	0.37	0.77	0.17
d, Delay for Lane Group [s/veh]	49.15	20.58	22.15	46.96	28.34	28.75	54.58	32.08	30.80	39.02	22.34
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.86	10.60	10.59	0.92	9.34	9.29	1.35	5.06	2.54	8.90	1.32
50th-Percentile Queue Length [ft/ln]	71.60	264.93	264.70	22.88	233.55	232.15	33.75	126.54	63.59	222.52	33.01
95th-Percentile Queue Length [veh/ln]	5.16	15.94	15.92	1.65	14.35	14.28	2.43	8.75	4.58	13.79	2.38
95th-Percentile Queue Length [ft/ln]	128.88	398.40	398.12	41.18	358.86	357.09	60.76	218.78	114.46	344.83	59.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.15	21.19	22.15	46.96	28.54	28.75	54.58	32.08	30.80	39.02	39.02	22.34
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	C
d_A, Approach Delay [s/veh]	23.70			29.17			34.36			36.10		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	28.63											
Intersection LOS	C											
Intersection V/C	0.574											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 48.8
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.483

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	119	1196	41	33	991	19	6	62	102	66	140	45
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	1196	41	33	991	19	6	62	102	66	140	45
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	315	11	9	258	5	2	18	30	18	39	13
Total Analysis Volume [veh/h]	126	1262	43	34	1033	20	7	73	121	70	158	51
Presence of On-Street Parking	No		No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	88	88	88	88	88	88	88	88
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	8	30	30	4	27	27	40	40
g / C, Green / Cycle	0.09	0.34	0.34	0.05	0.30	0.30	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.07	0.34	0.35	0.02	0.28	0.28	0.12	0.12
s, saturation flow rate [veh/h]	1810	1900	1866	1810	1900	1878	1667	1809
c, Capacity [veh/h]	160	655	644	83	575	568	755	819
d1, Uniform Delay [s]	39.44	28.94	28.94	40.96	29.77	29.82	14.97	14.96
k, delay calibration	0.04	0.44	0.45	0.04	0.27	0.28	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	33.00	35.87	1.19	14.04	14.80	0.82	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

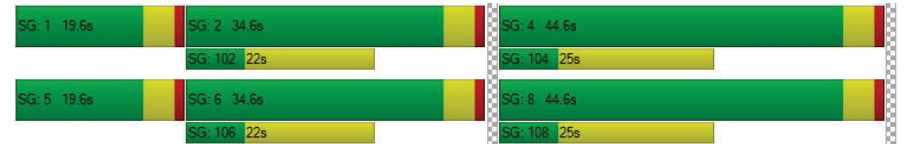
X, volume / capacity	0.79	1.00	1.01	0.41	0.92	0.92	0.26	0.26
d, Delay for Lane Group [s/veh]	42.65	61.94	64.80	42.15	43.80	44.62	15.79	15.71
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.78	19.19	19.36	0.74	12.64	12.69	2.48	2.65
50th-Percentile Queue Length [ft/ln]	69.46	479.79	483.97	18.45	316.10	317.23	61.98	66.34
95th-Percentile Queue Length [veh/ln]	5.00	26.38	26.74	1.33	18.48	18.53	4.46	4.78
95th-Percentile Queue Length [ft/ln]	125.02	659.44	668.56	33.21	461.89	463.29	111.57	119.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.65	63.32	64.80	42.15	44.20	44.62	0.00	15.79	15.79	0.00	15.71	15.71
Movement LOS	D	E	E	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	61.54			44.15			15.79			15.71		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	48.75											
Intersection LOS	D											
Intersection V/C	0.483											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized Delay (sec / veh): 39.3
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.677

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	231	594	0	1158	67	0	0	0	0	644	258
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	231	594	0	1158	67	0	0	0	0	644	258	759
Peak Hour Factor	0.8705	0.8705	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9088	0.9088	0.9088
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	171	0	305	18	0	0	0	0	177	71	209
Total Analysis Volume [veh/h]	265	682	0	1220	71	0	0	0	0	709	284	835
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	73	49	49	37	37	37	37
g / C, Green / Cycle	0.16	0.61	0.41	0.41	0.31	0.31	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.15	0.19	0.24	0.23	0.26	0.26	0.29	0.29
s, saturation flow rate [veh/h]	1810	3618	3618	1841	1810	1854	1457	1571
c, Capacity [veh/h]	291	2212	1492	759	564	578	454	490
d1, Uniform Delay [s]	49.46	11.15	27.16	27.01	38.43	38.18	39.89	40.13
k, delay calibration	0.23	0.50	0.50	0.50	0.25	0.24	0.32	0.33
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	19.34	0.36	1.63	3.06	7.49	6.36	19.68	21.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.31	0.58	0.57	0.84	0.82	0.92	0.94
d, Delay for Lane Group [s/veh]	68.80	11.51	28.79	30.07	45.92	44.54	59.57	61.12
Lane Group LOS	E	B	C	C	D	D	E	E
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.35	4.34	9.77	10.03	13.56	13.40	13.91	15.43
50th-Percentile Queue Length [ft/ln]	233.63	108.57	244.37	250.77	338.9	334.9	347.6	385.8
95th-Percentile Queue Length [veh/ln]	14.36	7.76	14.90	15.22	19.60	19.40	20.02	21.88
95th-Percentile Queue Length [ft/ln]	358.96	194.01	372.56	380.62	489.9	485.0	500.5	546.8

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.80	11.51	0.00	0.00	29.17	30.07	0.00	0.00	0.00	45.43	46.91	60.45
Movement LOS	E	B			C	C				D	D	E
d_A, Approach Delay [s/veh]	27.54		29.22		0.00		52.52					
Approach LOS	C		C		A		D					
d_I, Intersection Delay [s/veh]	39.30											
Intersection LOS	D											
Intersection V/C	0.677											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 29.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.541

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	772	252	532	1213	0	102	170	248	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	772	252	532	1213	0	102	170	248	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	214	70	143	326	0	29	49	71	0	0	0
Total Analysis Volume [veh/h]	0	856	280	571	1302	0	117	195	285	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	26	26	26	57	87	23	23	23
g / C, Green / Cycle	0.22	0.22	0.22	0.47	0.73	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.16	0.18	0.19	0.16	0.36	0.09	0.09	0.18
s, saturation flow rate [veh/h]	3618	1545	1450	3514	3618	1833	1729	1577
c, Capacity [veh/h]	778	332	312	1667	2632	359	338	309
d1, Uniform Delay [s]	43.88	45.32	45.80	19.79	6.95	42.53	42.51	47.35
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.19
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	2.54	3.78	0.56	0.67	0.33	0.34	17.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.86	0.90	0.34	0.49	0.45	0.45	0.92
d, Delay for Lane Group [s/veh]	44.38	47.87	49.58	20.35	7.62	42.86	42.85	65.14
Lane Group LOS	D	D	D	C	A	D	D	E
Critical Lane Group	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.86	8.30	8.32	5.12	6.55	4.21	3.95	9.77
50th-Percentile Queue Length [ft/ln]	196.55	207.49	208.11	128.04	163.63	105.33	98.81	244.14
95th-Percentile Queue Length [veh/ln]	12.46	13.02	13.06	8.83	10.74	7.58	7.11	14.89
95th-Percentile Queue Length [ft/ln]	311.51	325.61	326.41	220.82	268.53	189.49	177.85	372.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	44.79	49.58	20.35	7.62	0.00	42.86	42.86	65.14	0.00	0.00	0.00
Movement LOS		D	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]		46.54		11.50			53.50			0.00		
Approach LOS		D		B			D			A		
d_I, Intersection Delay [s/veh]		29.49										
Intersection LOS		C										
Intersection V/C		0.541										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 34.3
Level Of Service: C
Volume to Capacity (v/c): 0.539

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	Base Volume Input [veh/h]	696	249	83	770	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	696	249	83	770	110	174
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	194	69	26	241	32	50
Total Analysis Volume [veh/h]	777	278	104	966	126	200
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.21	0.21	0.15	0.27	0.15	0.27
s, saturation flow rate [veh/h]	3618	1353	693	3618	832	734
c, Capacity [veh/h]	2509	938	479	2509	145	128
d1, Uniform Delay [s]	5.98	5.91	10.03	6.41	40.14	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.35
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	0.81	1.04	0.45	5.92	277.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.30	0.22	0.39	0.87	1.56
d, Delay for Lane Group [s/veh]	6.30	6.72	11.07	6.86	46.06	318.34
Lane Group LOS	A	A	B	A	D	F
Critical Lane Group	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.89	2.18	1.19	3.86	3.18	12.94
50th-Percentile Queue Length [ft/ln]	72.35	54.44	29.69	96.53	79.56	323.54
95th-Percentile Queue Length [veh/ln]	5.21	3.92	2.14	6.95	5.73	22.15
95th-Percentile Queue Length [ft/ln]	130.23	97.99	53.45	173.76	143.21	553.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.30	6.72	11.07	6.86	46.06	318.34
Movement LOS	A	A	B	A	D	F
d_A, Approach Delay [s/veh]	6.41		7.27		213.11	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	34.28					
Intersection LOS	C					
Intersection V/C	0.539					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.1
Level Of Service: C
Volume to Capacity (v/c): 0.362

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	35	190	123	110	252	10	44	147	56	88	120	18
Base Volume Input [veh/h]	35	190	123	110	252	10	44	147	56	88	120	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	190	123	110	252	10	44	147	56	88	120	18
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	53	35	31	71	3	12	39	15	26	35	5
Total Analysis Volume [veh/h]	39	213	138	124	283	11	46	154	59	103	141	21
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	49	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.54	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.03	0.21	0.11	0.16	0.04	0.12	0.09	0.09
s, saturation flow rate [veh/h]	1175	1690	1145	1876	1025	1729	1156	1728
c, Capacity [veh/h]	757	884	706	1012	161	316	136	316
d1, Uniform Delay [s]	6.82	12.93	7.56	11.34	40.02	34.32	43.88	33.20
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	1.33	0.54	0.73	0.36	0.93	3.19	0.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

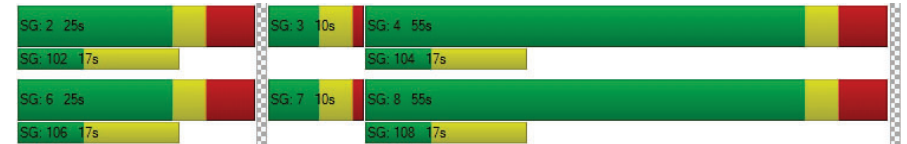
X, volume / capacity	0.05	0.40	0.18	0.29	0.29	0.67	0.76	0.51
d, Delay for Lane Group [s/veh]	6.83	14.27	8.11	12.07	40.38	35.25	47.06	33.68
Lane Group LOS	A	B	A	B	D	D	D	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.25	4.24	0.97	3.21	0.99	4.35	2.38	3.14
50th-Percentile Queue Length [ft/ln]	6.27	105.97	24.17	80.26	24.69	108.76	59.44	78.55
95th-Percentile Queue Length [veh/ln]	0.45	7.62	1.74	5.78	1.78	7.77	4.28	5.66
95th-Percentile Queue Length [ft/ln]	11.29	190.38	43.51	144.48	44.44	194.27	106.99	141.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.83	14.27	14.27	8.11	12.07	12.07	40.38	35.25	35.25	47.06	33.68	33.68
Movement LOS	A	B	B	A	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	13.52			10.90			36.16			38.88		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.15											
Intersection LOS	C											
Intersection V/C	0.362											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 14.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.543

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				No				Yes			

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Base Volume Input [veh/h]	36	0	874	75	175	1392	0	32	1085	209	73	0	90			
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	0	874	75	175	1392	0	32	1085	209	73	0	90				
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012		
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	234	20	48	384	0	8	271	52	23	0	28				
Total Analysis Volume [veh/h]	36	0	938	80	193	1535	0	32	1085	209	91	0	112				
Presence of On-Street Parking	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk			No			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	107	107	117	109	23	23
g / C, Green / Cycle	0.03	0.71	0.71	0.78	0.73	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.26	0.05	0.28	0.42	0.07	0.10
s, saturation flow rate [veh/h]	1810	3618	1585	696	3618	1231	1132
c, Capacity [veh/h]	47	2573	1127	552	2625	192	177
d1, Uniform Delay [s]	72.54	8.44	6.58	5.20	9.79	57.61	59.21
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.20	0.40	0.12	1.74	0.96	0.67	1.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

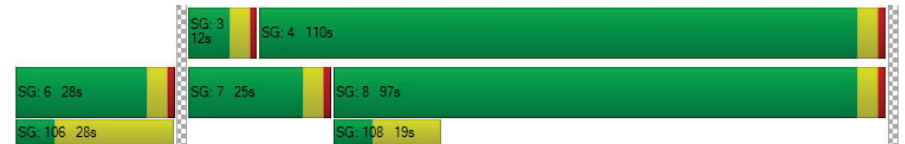
X, volume / capacity	0.77	0.36	0.07	0.35	0.58	0.47	0.63
d, Delay for Lane Group [s/veh]	81.74	8.84	6.71	6.94	10.75	58.29	60.61
Lane Group LOS	F	A	A	A	B	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.50	5.93	0.81	1.60	11.72	3.21	4.08
50th-Percentile Queue Length [ft/ln]	37.61	148.17	20.19	40.01	293.11	80.16	101.98
95th-Percentile Queue Length [veh/ln]	2.71	9.92	1.45	2.88	17.34	5.77	7.34
95th-Percentile Queue Length [ft/ln]	67.70	247.99	36.35	72.03	433.49	144.28	183.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	81.74	0.00	8.84	6.71	6.94	10.75	0.00	0.00	0.00	0.00	58.29	0.00	60.61
Movement LOS	F		A	A	A	B					E		E
d_A, Approach Delay [s/veh]	11.17		10.33			0.00		59.57					
Approach LOS	B		B			A		E					
d_I, Intersection Delay [s/veh]	13.97												
Intersection LOS	B												
Intersection V/C	0.543												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 78.5
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.121

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	31	2001	2	347	2528	19	13	28	24	147	18	320
Base Volume Input [veh/h]	31	2001	2	347	2528	19	13	28	24	147	18	320
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	2001	2	347	2528	19	13	28	24	147	18	320
Peak Hour Factor	0.8617	0.8617	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	581	1	89	646	5	5	11	10	44	5	96
Total Analysis Volume [veh/h]	36	2322	2	355	2586	19	21	45	38	177	22	385
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk		No			No			No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes		No	Yes			No			No	No	
Maximum Recall	No	No		No	No			No			No	No	
Pedestrian Recall	No	No		No	No			No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	324	324	324	324	324	324	324	324
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	8	199	66	256	256	45	45	115
g / C, Green / Cycle	0.03	0.61	0.20	0.79	0.79	0.14	0.14	0.35
(v / s)_i Volume / Saturation Flow Rate	0.02	0.45	0.20	0.47	0.47	0.34	0.48	0.24
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1893	306	418	1615
c, Capacity [veh/h]	45	3174	367	2859	1496	56	79	572
d1, Uniform Delay [s]	157.14	43.98	128.23	13.50	13.54	130.95	145.69	88.72
k, delay calibration	0.04	0.04	0.39	0.04	0.27	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.10	0.12	34.34	0.07	0.97	447.77	720.45	6.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

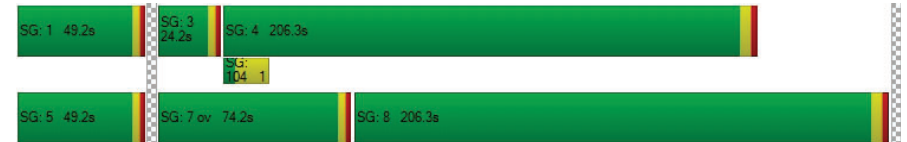
X, volume / capacity	0.80	0.73	0.97	0.60	0.60	1.86	2.52	0.67
d, Delay for Lane Group [s/veh]	168.24	44.10	162.57	13.57	14.52	578.71	866.14	94.93
Lane Group LOS	F	D	F	B	B	F	F	F
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.23	43.92	33.64	24.80	26.51	11.82	22.69	29.03
50th-Percentile Queue Length [ft/ln]	80.84	1098.05	840.95	619.88	662.66	295.53	567.36	725.87
95th-Percentile Queue Length [veh/ln]	5.82	54.79	43.15	32.96	34.95	20.88	38.12	37.87
95th-Percentile Queue Length [ft/ln]	145.51	1369.77	1078.74	824.04	873.74	521.97	952.93	946.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	168.24	44.10	0.00	162.57	13.89	14.52	578.71	578.71	578.71	866.14	866.14	94.93
Movement LOS	F	D		F	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	46.00		31.73			578.71		357.72				
Approach LOS	D		C			F		F				
d_I, Intersection Delay [s/veh]	78.50											
Intersection LOS	E											
Intersection V/C	1.121											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type:	Signalized	Delay (sec / veh):	127.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.109

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	292	403	112	38	453	93	66	120	201	0	30	134	62
Base Volume Input [veh/h]	292	403	112	38	453	93	66	120	201	0	30	134	62
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	292	403	112	38	453	93	66	120	201	0	30	134	62
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	107	30	11	130	27	18	33	55	0	9	42	19
Total Analysis Volume [veh/h]	311	430	119	43	518	106	72	131	220	0	38	168	78
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	60	60	3	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.60	0.60	0.03	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.17	0.23	0.09	0.02	0.27	0.08	0.66	0.14	0.35	0.09
s, saturation flow rate [veh/h]	1810	1900	1264	1810	1900	1352	305	1518	583	860
c, Capacity [veh/h]	189	1144	761	63	1012	720	105	570	151	159
d1, Uniform Delay [s]	44.75	10.22	8.73	47.71	15.02	11.85	41.07	22.79	38.88	36.50
k, delay calibration	0.31	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	305.10	0.94	0.44	4.88	1.85	0.43	450.38	0.16	201.95	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

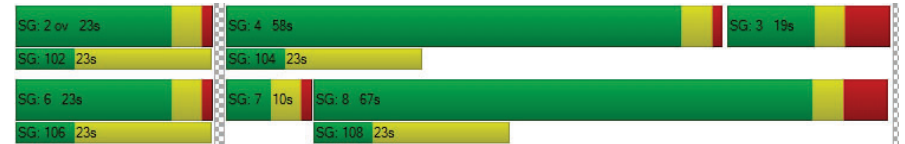
X, volume / capacity	1.65	0.38	0.16	0.69	0.51	0.15	1.93	0.39	1.37	0.49
d, Delay for Lane Group [s/veh]	349.85	11.16	9.16	52.59	16.87	12.28	491.45	22.95	240.83	37.37
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	20.65	4.83	1.16	1.14	7.70	1.25	15.82	3.81	12.16	1.71
50th-Percentile Queue Length [ft/ln]	516.33	120.72	29.07	28.47	192.43	31.13	395.48	95.21	304.05	42.86
95th-Percentile Queue Length [veh/ln]	32.90	8.43	2.09	2.05	12.25	2.24	27.50	6.86	20.33	3.09
95th-Percentile Queue Length [ft/ln]	822.61	210.81	52.33	51.24	306.18	56.04	687.60	171.38	508.29	77.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	349.85	11.16	9.16	52.59	16.87	12.28	491.45	491.45	22.95	240.8	240.8	240.8	37.37
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	133.37			18.44			247.79			184.95			
Approach LOS	F			B			F			F			
d_I, Intersection Delay [s/veh]	127.28												
Intersection LOS	F												
Intersection V/C	1.109												

Sequence

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



Intersection Level Of Service Report

Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	26.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.388

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Base Volume Input [veh/h]	505	178	204	577	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	178	204	577	250	299
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	137	48	54	152	72	86
Total Analysis Volume [veh/h]	546	193	215	609	288	344
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.15	0.14	0.21	0.17	0.17	0.12	0.19
s, saturation flow rate [veh/h]	3618	1370	1004	3618	1299	1671	1064
c, Capacity [veh/h]	2089	791	736	2509	226	291	186
d1, Uniform Delay [s]	10.51	10.38	5.73	5.64	41.15	38.91	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.15	0.04	0.21
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.73	1.01	0.23	29.86	1.22	67.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

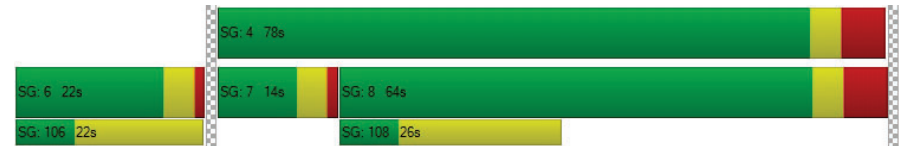
X, volume / capacity	0.26	0.24	0.29	0.24	0.99	0.71	1.08
d, Delay for Lane Group [s/veh]	10.81	11.12	6.74	5.87	71.01	40.13	108.56
Lane Group LOS	B	B	A	A	E	D	F
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.93	2.15	1.58	2.14	7.29	4.85	7.98
50th-Percentile Queue Length [ft/ln]	73.27	53.67	39.42	53.44	182.14	121.27	199.38
95th-Percentile Queue Length [veh/ln]	5.28	3.86	2.84	3.85	11.71	8.46	13.07
95th-Percentile Queue Length [ft/ln]	131.88	96.61	70.96	96.20	292.80	211.57	326.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.81	11.12	6.74	5.87	63.15	81.53
Movement LOS	B	B	A	A	E	F
d_A, Approach Delay [s/veh]	10.89		6.10		72.82	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	26.92					
Intersection LOS	C					
Intersection V/C	0.388					

Sequence

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



Intersection Level Of Service Report

Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.345

Intersection Setup

Name	Ocean Ave		Ocean Ave			Arizona Ave		
	Northbound		Southbound			Westbound		
Approach								
Lane Configuration						T		
Turning Movement	Thru	Right	U-turn	Left	Thru	U-turn	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00			35.00		
Grade [%]	0.00		0.00			0.00		
Crosswalk	Yes		Yes			Yes		

Volumes

Name	Ocean Ave		Ocean Ave			Arizona Ave		
	Base Volume Input [veh/h]	557	144	0	125	677	0	97
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	557	144	0	125	677	0	97	113
Peak Hour Factor	0.9093	0.9093	1.0000	0.9413	0.9413	1.0000	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	40	0	33	180	0	29	33
Total Analysis Volume [veh/h]	613	158	0	133	719	0	115	133
Presence of On-Street Parking	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389			253		
Bicycle Volume [bicycles/h]	6		7			22		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	4	4	0	6	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	Lag	-	-	Lag	-
Minimum Green [s]	7	7	0	7	7	0	7	7
Maximum Green [s]	30	30	0	30	30	0	25	25
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	5.0	5.0	0.0	5.0	5.0	0.0	1.0	1.0
Split [s]	69	69	0	69	69	0	31	31
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	7	7	0	0	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	0	0	18	18
Rest in Walk	No				No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	0.0	6.6	6.6	0.0	2.6	2.6
Minimum Recall	Yes				Yes		No	
Maximum Recall	No				No		No	
Pedestrian Recall	No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.17	0.12	0.17	0.20	0.15
s, saturation flow rate [veh/h]	3618	1339	805	3618	1700
c, Capacity [veh/h]	2236	827	487	2236	425
d1, Uniform Delay [s]	8.78	8.26	14.00	9.10	32.90
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.51	1.38	0.38	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.19	0.27	0.32	0.58
d, Delay for Lane Group [s/veh]	9.08	8.78	15.38	9.48	33.40
Lane Group LOS	A	A	B	A	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.94	1.50	1.87	3.58	5.20
50th-Percentile Queue Length [ft/ln]	73.54	37.50	46.65	89.50	130.09
95th-Percentile Queue Length [veh/ln]	5.29	2.70	3.36	6.44	8.94
95th-Percentile Queue Length [ft/ln]	132.37	67.50	83.97	161.10	223.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.08	8.78	15.38	15.38	9.48	33.40	33.40	33.40
Movement LOS	A	A	B	B	A	C	C	C
d_A, Approach Delay [s/veh]	9.02		10.40		33.40			
Approach LOS	A		B		C			
d_I, Intersection Delay [s/veh]					12.88			
Intersection LOS					B			
Intersection V/C					0.345			

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	40.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	536	233	143	634	176	136
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	536	233	143	634	176	136
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	151	66	41	181	49	37
Total Analysis Volume [veh/h]	604	263	163	725	194	150
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.17	0.20	0.17	0.20	0.23	0.12
s, saturation flow rate [veh/h]	3618	1296	962	3618	832	1238
c, Capacity [veh/h]	2190	785	740	2618	120	325
d1, Uniform Delay [s]	9.35	9.77	4.57	4.77	42.78	30.93
k, delay calibration	0.50	0.50	0.50	0.50	0.36	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	1.15	0.69	0.26	302.80	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.34	0.22	0.28	1.62	0.46
d, Delay for Lane Group [s/veh]	9.66	10.92	5.26	5.03	345.58	31.31
Lane Group LOS	A	B	A	A	F	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.03	2.92	1.00	2.27	13.03	3.03
50th-Percentile Queue Length [ft/ln]	75.73	73.04	24.96	56.63	325.73	75.87
95th-Percentile Queue Length [veh/ln]	5.45	5.26	1.80	4.08	22.24	5.46
95th-Percentile Queue Length [ft/ln]	136.31	131.47	44.92	101.93	555.97	136.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.66	10.92	5.26	5.03	345.58	31.31
Movement LOS	A	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.04		5.08		208.54	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	40.47					
Intersection LOS	D					
Intersection V/C	0.470					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 33.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.439

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	1	787	142	67	833	20	13	13	62	181	9	166
Base Volume Input [veh/h]	1	787	142	67	833	20	13	13	62	181	9	166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	787	142	67	833	20	13	13	62	181	9	166
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	221	41	18	219	5	4	6	18	51	3	47
Total Analysis Volume [veh/h]	1	883	165	71	875	21	15	24	73	203	10	187
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	82	82	77	77	10	23	23
g / C, Green / Cycle	0.55	0.55	0.52	0.52	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.00	0.24	0.24	0.24	0.05	0.12	0.14
s, saturation flow rate [veh/h]	672	3618	1900	1881	1645	1814	1321
c, Capacity [veh/h]	342	1981	979	969	106	282	205
d1, Uniform Delay [s]	17.18	20.29	23.05	23.12	69.30	60.60	62.30
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	0.73	1.54	1.59	6.04	1.70	17.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

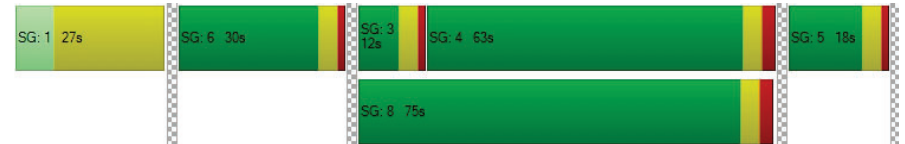
X, volume / capacity	0.00	0.45	0.46	0.46	0.83	0.76	0.91
d, Delay for Lane Group [s/veh]	17.18	21.02	24.60	24.71	75.34	62.30	79.69
Lane Group LOS	B	C	C	C	E	E	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.02	9.52	10.56	10.60	3.51	7.98	8.08
50th-Percentile Queue Length [ft/ln]	0.40	238.00	264.01	264.98	87.80	199.57	201.92
95th-Percentile Queue Length [veh/ln]	0.03	14.58	15.89	15.94	6.32	12.62	12.74
95th-Percentile Queue Length [ft/ln]	0.72	364.51	397.25	398.47	158.04	315.41	318.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.18	21.02	0.00	0.00	24.65	24.71	75.34	0.00	75.34	62.30	62.30	79.69
Movement LOS	B	C			C	C	E		E	E	E	E
d_A, Approach Delay [s/veh]	21.02		24.65			75.34		70.43				
Approach LOS	C		C			E		E				
d_I, Intersection Delay [s/veh]	33.28											
Intersection LOS	C											
Intersection V/C	0.439											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 24.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.447

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	393	659	785	169	127	570
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	393	659	785	169	127	570
Peak Hour Factor	0.9529	0.9529	0.9745	0.9745	0.9595	0.9595
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	173	201	43	33	149
Total Analysis Volume [veh/h]	412	692	806	173	132	594
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	16	75	75	75	14	35
g / C, Green / Cycle	0.14	0.63	0.63	0.63	0.12	0.29
(v / s)_i Volume / Saturation Flow Rate	0.12	0.19	0.22	0.13	0.11	0.21
s, saturation flow rate [veh/h]	3514	3618	3618	1333	1237	2859
c, Capacity [veh/h]	477	2274	2274	838	149	842
d1, Uniform Delay [s]	50.73	10.22	10.64	9.50	51.92	37.66
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.86	0.35	0.43	0.56	6.64	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

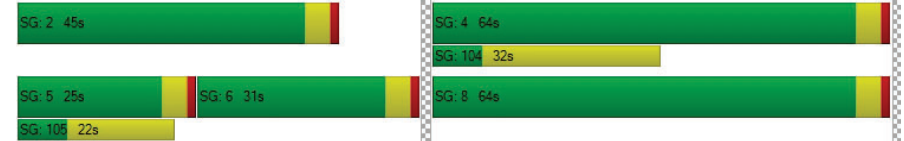
X, volume / capacity	0.86	0.30	0.35	0.21	0.89	0.71
d, Delay for Lane Group [s/veh]	52.58	10.57	11.07	10.06	58.56	38.07
Lane Group LOS	D	B	B	B	E	D
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.17	4.17	5.06	2.02	4.38	8.28
50th-Percentile Queue Length [ft/ln]	154.25	104.26	126.48	50.42	109.43	207.01
95th-Percentile Queue Length [veh/ln]	10.24	7.51	8.75	3.63	7.81	13.00
95th-Percentile Queue Length [ft/ln]	256.09	187.67	218.70	90.76	195.21	324.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.58	10.57	11.07	10.06	58.56	38.07
Movement LOS	D	B	B	B	E	D
d_A, Approach Delay [s/veh]	26.25		10.89		41.79	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	24.91					
Intersection LOS	C					
Intersection V/C	0.447					

Sequence

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



Intersection Level Of Service Report

Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 29.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.480

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd				
Base Volume Input [veh/h]	0	0	0	0	69	152	61	3	270	98	290	279	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	0	0	0	69	152	61	3	270	98	290	279	
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319		
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	0	0	0	0	23	50	20	1	71	26	78	75	
Total Analysis Volume [veh/h]	0	0	0	0	91	201	81	3	285	103	311	299	
Presence of On-Street Parking					No				No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	6				70				188				
Bicycle Volume [bicycles/h]	33				8				56				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk						No					No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall						Yes			Yes		Yes	
Maximum Recall						No			No		No	
Pedestrian Recall						No			No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	53	53	53	65	65	65
g / C, Green / Cycle	0.44	0.44	0.44	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.08	0.09	0.23	0.16	0.20
s, saturation flow rate [veh/h]	1058	1900	1522	1222	1900	1464
c, Capacity [veh/h]	410	835	668	685	1025	790
d1, Uniform Delay [s]	29.43	20.42	20.72	15.51	15.22	16.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	0.45	0.69	1.86	0.76	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.17	0.20	0.42	0.30	0.38
d, Delay for Lane Group [s/veh]	30.68	20.88	21.41	17.37	15.99	17.38
Lane Group LOS	C	C	C	B	B	B
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.05	2.56	2.47	4.49	4.77	4.90
50th-Percentile Queue Length [ft/ln]	51.36	63.96	61.63	112.37	119.25	122.57
95th-Percentile Queue Length [veh/ln]	3.70	4.60	4.44	7.97	8.35	8.53
95th-Percentile Queue Length [ft/ln]	92.46	115.12	110.93	199.29	208.80	213.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	30.68	21.02	21.41	0.00	17.37	0.00	15.99	17.38
Movement LOS					C	C	C		B		B	B
d_A, Approach Delay [s/veh]	0.00				23.46				16.89			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	29.52											
Intersection LOS	C											
Intersection V/C	0.480											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	46	595	222	155	758	65	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	46	595	222	155	758	65	129
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	158	59	43	210	17	34
Total Analysis Volume [veh/h]	1	49	632	236	172	841	69	134
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	46	46	46
g / C, Green / Cycle	0.26	0.26	0.26	0.38	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.19	0.16	0.26	0.28
s, saturation flow rate [veh/h]	586	3618	1246	1078	1900	1728
c, Capacity [veh/h]	67	953	328	377	730	664
d1, Uniform Delay [s]	59.88	39.43	40.15	27.04	30.87	31.41
k, delay calibration	0.04	0.04	0.04	0.04	0.08	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.58	0.30	1.12	0.32	0.80	2.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

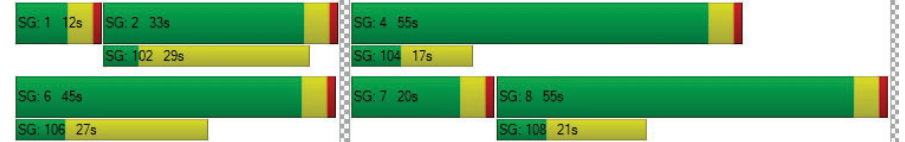
X, volume / capacity	0.73	0.66	0.72	0.46	0.68	0.72
d, Delay for Lane Group [s/veh]	65.46	39.73	41.26	27.36	31.67	33.49
Lane Group LOS	E	D	D	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.60	8.33	6.41	3.39	12.10	11.98
50th-Percentile Queue Length [ft/ln]	39.89	208.29	160.19	84.69	302.58	299.45
95th-Percentile Queue Length [veh/ln]	2.87	13.07	10.56	6.10	17.81	17.65
95th-Percentile Queue Length [ft/ln]	71.81	326.63	263.97	152.44	445.22	441.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	65.46	39.73	41.26	27.36	32.41	0.00	33.49
Movement LOS		E	D	D	C	C		C
d_A, Approach Delay [s/veh]		41.50			31.78			
Approach LOS		D			C			
d_I, Intersection Delay [s/veh]		29.52						
Intersection LOS		C						
Intersection V/C		0.480						

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 105.7
 Level Of Service: F
 Volume to Capacity (v/c): 0.617

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	71	109	218	0	43	65	62	0	33	245	52	0	167	429	70
Base Volume Input [veh/h]	0	71	109	218	0	43	65	62	0	33	245	52	0	167	429	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	71	109	218	0	43	65	62	0	33	245	52	0	167	429	70
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	1.000	0.868	0.868	0.868	1.000	0.968	0.968	0.968
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	19	29	58	0	12	18	17	0	10	71	15	0	43	111	18
Total Analysis Volume [veh/h]	0	76	116	232	0	47	70	67	0	38	282	60	0	173	443	72
Presence of On-Street Parking	No		No	No	No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.46	0.04	0.08	0.04	0.16	0.14	0.14
s, saturation flow rate [veh/h]	1272	1665	398	900	3618	1577	1115	1900	1790
c, Capacity [veh/h]	73	258	103	397	1709	745	521	898	846
d1, Uniform Delay [s]	50.02	42.26	42.85	21.34	15.09	14.47	21.09	16.16	16.20
k, delay calibration	0.04	0.15	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	40.28	164.35	390.21	0.48	0.21	0.21	1.71	0.83	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.04	1.35	1.79	0.10	0.16	0.08	0.33	0.29	0.30
d, Delay for Lane Group [s/veh]	90.30	206.61	433.06	21.82	15.30	14.68	22.80	16.99	17.09
Lane Group LOS	F	F	F	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.62	18.02	13.70	0.64	1.85	0.78	3.05	3.80	3.65
50th-Percentile Queue Length [ft/ln]	65.60	450.38	342.51	16.06	46.16	19.42	76.19	94.97	91.32
95th-Percentile Queue Length [veh/ln]	4.72	28.27	23.65	1.16	3.32	1.40	5.49	6.84	6.57
95th-Percentile Queue Length [ft/ln]	118.08	706.76	591.18	28.90	83.08	34.95	137.15	170.94	164.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	90.30	90.30	206.6	206.6	433.0	433.0	433.0	433.0	21.82	21.82	15.30	14.68	22.80	22.80	17.03	17.09
Movement LOS	F	F	F	F	F	F	F	F	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	185.76				433.06				15.86				18.49			
Approach LOS	F				F				B				B			
d_I, Intersection Delay [s/veh]	105.72															
Intersection LOS	F															
Intersection V/C	0.617															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.2
Level Of Service: C
Volume to Capacity (v/c): 0.344

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Base Volume Input [veh/h]	81	221	130	31	101	27	44	86	55	63	68	84
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	221	130	31	101	27	44	86	55	63	68	84
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	58	34	9	30	8	14	26	17	18	19	24
Total Analysis Volume [veh/h]	86	233	137	37	119	32	54	106	68	72	77	95
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	16	16	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	51	51
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.03	0.08	0.14	0.22
s, saturation flow rate [veh/h]	1256	1900	1536	1166	1806	1579	1100
c, Capacity [veh/h]	186	363	293	131	345	845	604
d1, Uniform Delay [s]	44.40	37.31	35.94	46.53	35.72	13.93	15.62
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	0.71	0.43	0.43	0.33	0.78	2.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

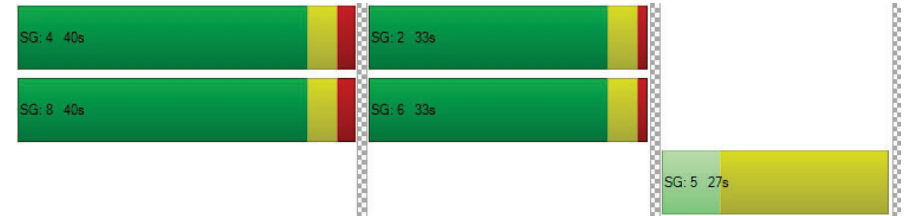
X, volume / capacity	0.46	0.64	0.47	0.28	0.44	0.27	0.40
d, Delay for Lane Group [s/veh]	45.06	38.02	36.37	46.96	36.05	14.72	17.62
Lane Group LOS	D	D	D	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.08	5.21	2.95	0.90	3.22	2.95	3.73
50th-Percentile Queue Length [ft/ln]	51.96	130.28	73.65	22.60	80.50	73.82	93.22
95th-Percentile Queue Length [veh/ln]	3.74	8.95	5.30	1.63	5.80	5.31	6.71
95th-Percentile Queue Length [ft/ln]	93.53	223.87	132.57	40.68	144.90	132.87	167.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.06	38.02	36.37	46.96	36.05	36.05	14.72	14.72	14.72	17.62	17.62	17.62
Movement LOS	D	D	D	D	D	D	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	38.86			38.20			14.72			17.62		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	29.17											
Intersection LOS	C											
Intersection V/C	0.344											

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 60.0
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.789

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	65	251	185	55	149	48	39	218	94	75	156
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	251	185	55	149	48	39	218	94	75	156	183
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	71	52	15	41	13	11	59	25	22	45	53
Total Analysis Volume [veh/h]	73	283	208	61	166	53	42	236	102	86	179	210
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.06	0.15	0.26	0.05	0.12	0.40	0.06	0.53	0.13
s, saturation flow rate [veh/h]	1181	1900	800	1114	1796	696	1570	501	1581
c, Capacity [veh/h]	148	370	156	112	349	391	789	300	795
d1, Uniform Delay [s]	46.60	38.09	40.25	48.81	36.92	20.28	13.22	32.01	14.25
k, delay calibration	0.04	0.06	0.42	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.94	1.84	182.98	1.55	0.69	10.47	0.34	29.36	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

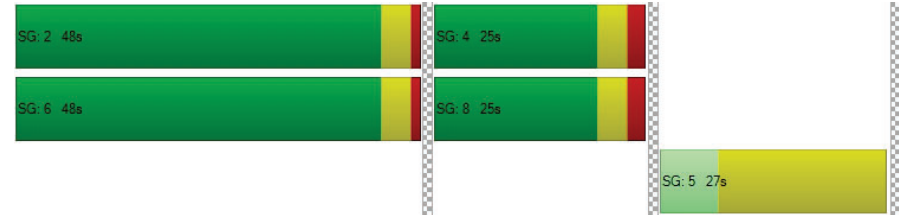
X, volume / capacity	0.49	0.77	1.34	0.55	0.63	0.71	0.13	0.88	0.26
d, Delay for Lane Group [s/veh]	47.53	39.93	223.23	50.36	37.61	30.74	13.55	61.37	15.06
Lane Group LOS	D	D	F	D	D	C	B	E	B
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.82	6.59	11.63	1.55	4.87	4.69	1.26	8.95	2.82
50th-Percentile Queue Length [ft/ln]	45.45	164.87	290.84	38.80	121.79	117.23	31.60	223.77	70.51
95th-Percentile Queue Length [veh/ln]	3.27	10.81	19.47	2.79	8.49	8.24	2.28	13.86	5.08
95th-Percentile Queue Length [ft/ln]	81.82	270.16	486.72	69.84	212.29	206.01	56.88	346.43	126.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.53	39.93	223.23	50.36	37.61	37.61	30.74	30.74	13.55	61.37	61.37	15.06
Movement LOS	D	D	F	D	D	C	C	B	E	E	B	
d_A, Approach Delay [s/veh]	108.52			40.39			26.13			40.90		
Approach LOS	F			D			C			D		
d_I, Intersection Delay [s/veh]	59.96											
Intersection LOS	E											
Intersection V/C	0.789											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.5
Level Of Service: C
Volume to Capacity (v/c): 0.328

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	Base Volume Input [veh/h]	73	200	186	84	199	35	70	195	106	112	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	200	186	84	199	35	70	195	106	112	191	196
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	59	55	22	53	9	18	51	28	32	55	57
Total Analysis Volume [veh/h]	87	237	220	90	213	37	73	204	111	129	220	226
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	44	44	44	44	44
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.44	0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.15	0.08	0.14	0.06	0.18	0.12	0.12	0.14
s, saturation flow rate [veh/h]	1148	1900	1469	1161	1840	1179	1766	1081	1900	1560
c, Capacity [veh/h]	180	448	346	194	434	485	781	398	840	689
d1, Uniform Delay [s]	44.41	33.36	34.34	43.39	33.79	22.53	18.94	27.67	17.60	18.20
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.36	0.72	0.64	0.45	0.66	1.55	2.15	0.76	1.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

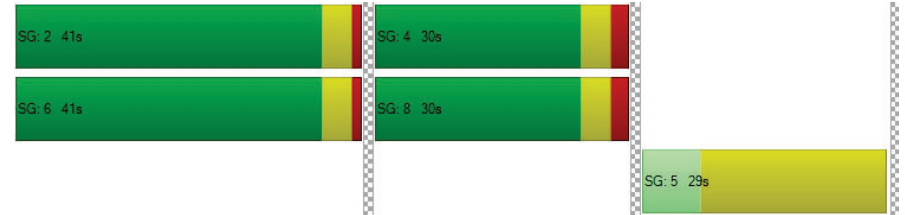
X, volume / capacity	0.48	0.53	0.64	0.46	0.58	0.15	0.40	0.32	0.26	0.33
d, Delay for Lane Group [s/veh]	45.16	33.72	35.07	44.03	34.24	23.19	20.50	29.81	18.36	19.47
Lane Group LOS	D	C	D	D	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.11	4.95	4.75	2.15	5.29	1.25	5.09	2.62	3.26	3.52
50th-Percentile Queue Length [ft/ln]	52.80	123.64	118.82	53.85	132.26	31.33	127.29	65.61	81.58	88.02
95th-Percentile Queue Length [veh/ln]	3.80	8.59	8.33	3.88	9.06	2.26	8.79	4.72	5.87	6.34
95th-Percentile Queue Length [ft/ln]	95.04	214.82	208.21	96.94	226.56	56.39	219.81	118.11	146.84	158.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.16	33.72	35.07	44.03	34.24	34.24	23.19	20.50	20.50	29.81	18.36	19.47
Movement LOS	D	C	D	D	C	C	C	C	C	C	B	B
d_A, Approach Delay [s/veh]	36.09			36.83			21.00			21.37		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.47											
Intersection LOS	C											
Intersection V/C	0.328											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 35.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.362

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	41	339	0	29	325	129	66	90	0	117	219
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	339	0	29	325	129	66	90	0	117	219	176
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	91	0	8	87	35	20	27	0	31	58	47
Total Analysis Volume [veh/h]	44	364	0	31	349	139	79	108	0	124	233	187
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	30	30	30	30	61	61
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.19	0.10	0.16	0.17
s, saturation flow rate [veh/h]	1028	1863	1863	1381	1861	1485
c, Capacity [veh/h]	123	465	465	345	944	753
d1, Uniform Delay [s]	55.23	41.98	41.57	37.56	17.35	17.50
k, delay calibration	0.04	0.15	0.30	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	3.96	6.66	0.28	0.87	1.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.78	0.75	0.40	0.31	0.33
d, Delay for Lane Group [s/veh]	55.88	45.94	48.23	37.84	18.22	18.67
Lane Group LOS	E	D	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.33	10.53	10.27	3.41	5.08	4.33
50th-Percentile Queue Length [ft/ln]	33.21	263.18	256.78	85.34	126.99	108.36
95th-Percentile Queue Length [veh/ln]	2.39	15.85	15.53	6.14	8.78	7.75
95th-Percentile Queue Length [ft/ln]	59.78	396.21	388.18	153.61	219.40	193.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.88	45.94	0.00	0.00	48.23	37.84	0.00	0.00	0.00	18.22	18.33	18.67
Movement LOS	E	D			D	D				B	B	B
d_A, Approach Delay [s/veh]	47.02		45.27		0.00		18.42					
Approach LOS	D		D		A		B					
d_I, Intersection Delay [s/veh]	35.62											
Intersection LOS	D											
Intersection V/C	0.362											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 29.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.512

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	47	291	176	170	150	37	123	508	25	197	580	112
Base Volume Input [veh/h]	47	291	176	170	150	37	123	508	25	197	580	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	291	176	170	150	37	123	508	25	197	580	112
Peak Hour Factor	0.9113	0.9113	0.9113	0.9394	0.9394	0.9394	0.9213	0.9213	0.9213	0.8418	0.8418	0.8418
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	80	48	45	40	10	33	138	7	59	172	33
Total Analysis Volume [veh/h]	52	319	193	181	160	39	134	551	27	234	689	133
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	36	36	36	47	47	47	34	19	19	34	23	23
g / C, Green / Cycle	0.40	0.40	0.40	0.52	0.52	0.52	0.38	0.21	0.21	0.38	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.04	0.17	0.13	0.15	0.08	0.02	0.15	0.15	0.16	0.19	0.22	0.23
s, saturation flow rate [veh/h]	1230	1900	1541	1224	1900	1568	896	1900	1828	1217	1900	1720
c, Capacity [veh/h]	483	751	609	626	992	819	384	398	383	454	483	437
d1, Uniform Delay [s]	21.24	19.79	18.82	12.25	11.22	10.54	21.47	33.26	33.40	21.49	32.25	32.66
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.49	0.15	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	1.76	1.36	1.17	0.35	0.11	0.20	0.98	1.12	4.03	6.84	11.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

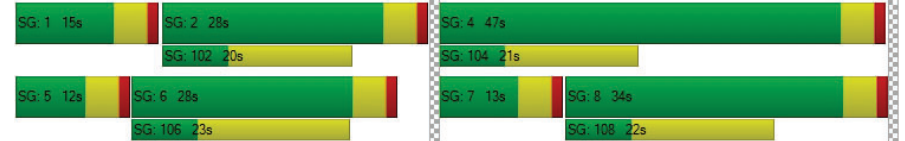
X, volume / capacity	0.11	0.42	0.32	0.29	0.16	0.05	0.35	0.73	0.75	0.52	0.88	0.91
d, Delay for Lane Group [s/veh]	21.68	21.55	20.19	13.42	11.57	10.65	21.67	34.24	34.52	25.53	39.09	44.18
Lane Group LOS	C	C	C	B	B	B	C	C	C	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.80	4.97	2.88	1.98	1.64	0.38	1.83	5.84	5.79	3.87	9.37	9.49
50th-Percentile Queue Length [ft/ln]	20.08	124.18	71.96	49.46	40.97	9.45	45.83	146.06	144.75	96.81	234.26	237.18
95th-Percentile Queue Length [veh/ln]	1.45	8.62	5.18	3.56	2.95	0.68	3.30	9.81	9.74	6.97	14.39	14.54
95th-Percentile Queue Length [ft/ln]	36.15	215.56	129.53	89.03	73.74	17.02	82.49	245.16	243.40	174.26	359.76	363.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.68	21.55	20.19	13.42	11.57	10.65	21.67	34.37	34.52	25.53	41.06	44.18
Movement LOS	C	C	C	B	B	C	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	21.09			12.36			31.98			38.01		
Approach LOS	C			B			C			D		
d_I, Intersection Delay [s/veh]	29.32											
Intersection LOS	C											
Intersection V/C	0.512											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.317

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	81	121	101	107	139	40	24	467	107	144	630	118
Base Volume Input [veh/h]	81	121	101	107	139	40	24	467	107	144	630	118
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	121	101	107	139	40	24	467	107	144	630	118
Peak Hour Factor	0.7729	0.7729	0.7729	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	39	33	29	37	11	6	124	28	40	174	33
Total Analysis Volume [veh/h]	105	157	131	115	150	43	26	497	114	159	695	130
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.9
Level Of Service: C
Volume to Capacity (v/c): 0.352

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	26	156	52	42	278	51	22	137	84	72	141	65
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	156	52	42	278	51	22	137	84	72	141	65
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	44	15	13	89	16	6	39	24	20	39	18
Total Analysis Volume [veh/h]	29	176	59	54	357	65	25	156	95	80	156	72
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	42	42	42	42	42	42	26
g / C, Green / Cycle	0.42	0.42	0.42	0.42	0.42	0.42	0.26
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.04	0.04	0.11	0.12	0.17
s, saturation flow rate [veh/h]	980	1900	1556	1228	1900	1779	1653
c, Capacity [veh/h]	391	800	655	493	800	750	463
d1, Uniform Delay [s]	23.42	18.45	17.40	22.60	18.88	18.95	32.78
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.05
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.63	0.27	0.45	0.83	0.91	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

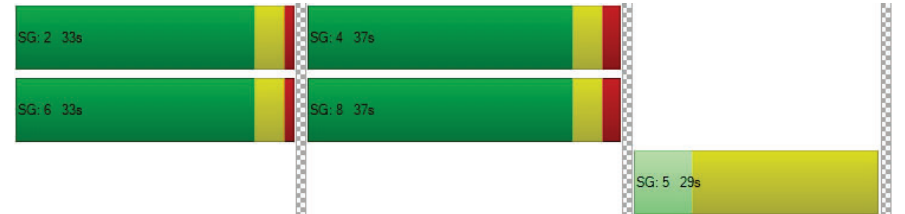
X, volume / capacity	0.07	0.22	0.09	0.11	0.27	0.28	0.60
d, Delay for Lane Group [s/veh]	23.79	19.09	17.68	23.05	19.71	19.86	33.37
Lane Group LOS	C	B	B	C	B	B	C
Critical Lane Group	No	No	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.51	2.65	0.84	0.92	3.33	3.22	5.90
50th-Percentile Queue Length [ft/ln]	12.66	66.31	21.09	22.91	83.17	80.49	147.43
95th-Percentile Queue Length [veh/ln]	0.91	4.77	1.52	1.65	5.99	5.80	9.88
95th-Percentile Queue Length [ft/ln]	22.78	119.36	37.96	41.23	149.71	144.88	247.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.79	19.09	17.68	23.05	19.77	19.86	33.37	33.37	33.37	46.44	46.44	46.44
Movement LOS	C	B	B	C	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	19.29		20.15			33.37			46.44			
Approach LOS	B		C			C			D			
d_I, Intersection Delay [s/veh]	28.85											
Intersection LOS	C											
Intersection V/C	0.352											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.296

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	28	193	73	69	358	55	0	304	172	0	354
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	193	73	69	358	55	0	304	172	0	354	69
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	58	22	19	97	15	0	82	47	0	101	20
Total Analysis Volume [veh/h]	34	234	88	74	386	59	0	329	186	0	403	79
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	50	50	50	19	19	19	19
g / C, Green / Cycle	0.50	0.50	0.50	0.50	0.50	0.50	0.19	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.04	0.12	0.06	0.06	0.12	0.12	0.17	0.12	0.13	0.14
s, saturation flow rate [veh/h]	960	1900	1583	1165	1900	1801	1900	1562	1900	1780
c, Capacity [veh/h]	462	957	797	544	957	907	367	302	367	344
d1, Uniform Delay [s]	18.26	14.05	13.04	18.90	13.98	14.02	39.35	36.93	37.26	37.63
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.07	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.61	0.28	0.52	0.58	0.63	5.23	0.77	0.75	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

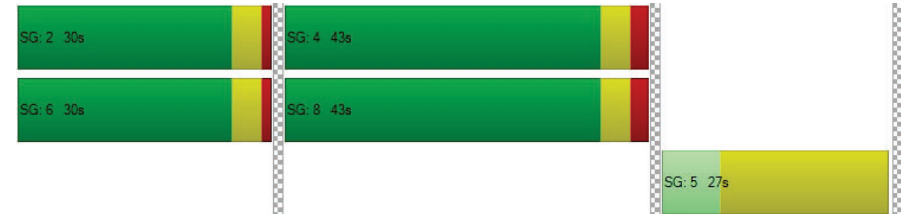
X, volume / capacity	0.07	0.24	0.11	0.14	0.24	0.24	0.90	0.62	0.66	0.70
d, Delay for Lane Group [s/veh]	18.57	14.65	13.32	19.42	14.57	14.64	44.57	37.69	38.01	38.60
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.51	3.00	1.05	1.14	2.90	2.81	8.30	4.19	5.47	5.54
50th-Percentile Queue Length [ft/ln]	12.76	75.11	26.37	28.42	72.39	70.16	207.57	104.68	136.65	138.40
95th-Percentile Queue Length [veh/ln]	0.92	5.41	1.90	2.05	5.21	5.05	13.03	7.54	9.30	9.39
95th-Percentile Queue Length [ft/ln]	22.97	135.21	47.46	51.16	130.29	126.29	325.71	188.42	232.51	234.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.57	14.65	13.32	19.42	14.60	14.64	0.00	44.57	37.69	0.00	38.25	38.60
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	14.70			15.29			42.09			38.30		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.48											
Intersection LOS	C											
Intersection V/C	0.296											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 40.2
Level Of Service: D
Volume to Capacity (v/c): 0.462

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	160	286	104	72	338	66	0	196	210	91	360
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	160	286	104	72	338	66	0	196	210	91	360	84
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	83	30	23	109	21	0	55	58	26	103	24
Total Analysis Volume [veh/h]	185	331	120	93	435	85	0	218	234	104	412	96
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	17	48	48	60	38	38	16	37	28	28	28
g / C, Green / Cycle	0.14	0.40	0.40	0.50	0.32	0.32	0.13	0.31	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.10	0.17	0.08	0.08	0.14	0.14	0.11	0.15	0.07	0.22	0.06
s, saturation flow rate [veh/h]	1810	1900	1568	1182	1900	1776	1900	1561	1405	1900	1563
c, Capacity [veh/h]	251	767	633	540	609	569	254	485	288	444	365
d1, Uniform Delay [s]	49.59	25.86	23.13	17.07	32.23	32.32	50.88	33.52	38.20	45.01	37.56
k, delay calibration	0.09	0.50	0.50	0.50	0.50	0.50	0.04	0.09	0.04	0.18	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.40	1.77	0.66	0.69	2.28	2.51	3.25	0.61	0.32	13.23	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.43	0.19	0.17	0.44	0.45	0.86	0.48	0.36	0.93	0.26
d, Delay for Lane Group [s/veh]	52.98	27.63	23.79	17.76	34.51	34.84	54.14	34.13	38.52	58.23	37.70
Lane Group LOS	D	C	C	B	C	C	D	C	D	E	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.51	7.10	2.30	1.44	6.44	6.18	6.63	5.61	2.50	13.44	2.31
50th-Percentile Queue Length [ft/ln]	137.75	177.41	57.38	35.99	161.08	154.45	165.83	140.23	62.55	336.00	57.75
95th-Percentile Queue Length [veh/ln]	9.36	11.47	4.13	2.59	10.61	10.25	10.86	9.49	4.50	19.45	4.16
95th-Percentile Queue Length [ft/ln]	234.00	286.63	103.28	64.78	265.16	256.36	271.42	237.33	112.59	486.31	103.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.98	27.63	23.79	17.76	34.63	34.84	0.00	54.14	34.13	38.52	58.23	37.70
Movement LOS	D	C	C	B	C	C		D	C	D	E	D
d_A, Approach Delay [s/veh]	34.28			32.10			43.78			51.66		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	40.16											
Intersection LOS	D											
Intersection V/C	0.462											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 21.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.392

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T						T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	185	511	0	0	605	149	181	0	84	117	166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	185	511	0	0	605	149	181	0	84	117	166	30
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	153	0	0	167	41	52	0	24	32	46	8
Total Analysis Volume [veh/h]	221	611	0	0	668	164	208	0	96	129	182	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	77	77	64	64	14	14
g / C, Green / Cycle	0.64	0.64	0.53	0.53	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.27	0.17	0.22	0.24	0.10	0.10
s, saturation flow rate [veh/h]	832	3618	1900	1744	1834	1661
c, Capacity [veh/h]	521	2316	1012	929	214	193
d1, Uniform Delay [s]	10.91	9.35	16.78	17.22	51.95	51.98
k, delay calibration	0.26	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.33	0.28	1.24	1.56	3.46	3.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.26	0.41	0.45	0.84	0.85
d, Delay for Lane Group [s/veh]	12.24	9.63	18.02	18.78	55.42	55.91
Lane Group LOS	B	A	B	B	E	E
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.49	3.44	6.98	7.21	5.56	5.09
50th-Percentile Queue Length [ft/ln]	62.13	85.93	174.49	180.14	138.94	127.13
95th-Percentile Queue Length [veh/ln]	4.47	6.19	11.31	11.61	9.42	8.78
95th-Percentile Queue Length [ft/ln]	111.84	154.67	282.80	290.20	235.60	219.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.24	9.63	0.00	0.00	18.31	18.78	0.00	0.00	0.00	55.42	55.77	55.91
Movement LOS	B	A			B	B				E	E	E
d_A, Approach Delay [s/veh]	10.32		18.40		0.00		55.65					
Approach LOS	B		B		A		E					
d_I, Intersection Delay [s/veh]	21.44											
Intersection LOS	C											
Intersection V/C	0.392											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	26.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.440

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		Westbound	
Base Volume Input [veh/h]	335	0	0	679	647	329
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	335	0	0	679	647	329
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	0	0	192	178	90
Total Analysis Volume [veh/h]	383	0	0	768	711	361
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	81	81	30	30
g / C, Green / Cycle	0.67	0.67	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.11	0.21	0.20	0.23
s, saturation flow rate [veh/h]	3618	3618	3514	1584
c, Capacity [veh/h]	2439	2439	875	394
d1, Uniform Delay [s]	7.11	8.07	42.37	43.77
k, delay calibration	0.50	0.50	0.04	0.10
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.34	0.71	8.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

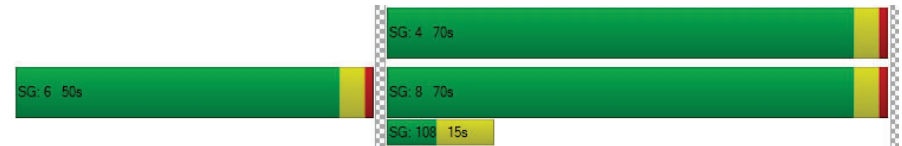
X, volume / capacity	0.16	0.31	0.81	0.92
d, Delay for Lane Group [s/veh]	7.24	8.41	43.08	52.17
Lane Group LOS	A	A	D	D
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.76	4.00	9.44	10.73
50th-Percentile Queue Length [ft/ln]	43.88	100.10	235.93	268.23
95th-Percentile Queue Length [veh/ln]	3.16	7.21	14.48	16.10
95th-Percentile Queue Length [ft/ln]	78.98	180.17	361.88	402.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.24	0.00	0.00	8.41	43.08	52.17
Movement LOS	A			A	D	D
d_A, Approach Delay [s/veh]	7.24		8.41		46.14	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				26.40		
Intersection LOS				C		
Intersection V/C				0.440		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 42.5
Level Of Service: D
Volume to Capacity (v/c): 0.514

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	38	294	387	422	597	223	91	581	31	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	294	387	422	597	223	91	581	31	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	75	99	118	167	62	27	174	9	0	0	0
Total Analysis Volume [veh/h]	39	301	396	472	667	249	109	694	37	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No				
Maximum Recall	No	No		No	No			No				
Pedestrian Recall	No	No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	25	25	60	81	81	21	21	21
g / C, Green / Cycle	0.03	0.21	0.21	0.50	0.68	0.68	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.16	0.22	0.13	0.25	0.27	0.16	0.16	0.16
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1620	1866	1729	1681
c, Capacity [veh/h]	56	396	376	1755	1287	1098	330	305	297
d1, Uniform Delay [s]	57.49	44.56	47.39	17.33	8.32	8.56	48.27	48.24	48.32
k, delay calibration	0.04	0.21	0.46	0.04	0.50	0.50	0.12	0.12	0.12
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.84	5.78	59.54	0.03	0.82	1.09	9.62	9.91	11.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

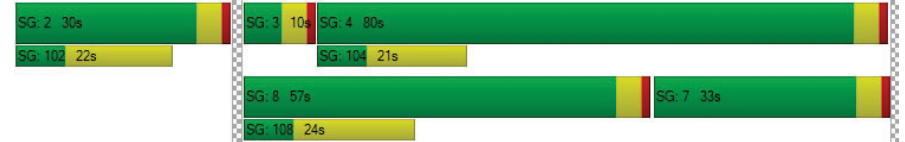
X, volume / capacity	0.70	0.76	1.05	0.27	0.37	0.40	0.90	0.90	0.91
d, Delay for Lane Group [s/veh]	63.33	50.34	106.93	17.36	9.13	9.65	57.90	58.15	59.41
Lane Group LOS	E	D	F	B	A	A	E	E	E
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.26	9.03	17.35	3.77	5.28	5.08	9.46	8.76	8.69
50th-Percentile Queue Length [ft/ln]	31.55	225.80	433.74	94.14	132.10	127.02	236.46	218.96	217.27
95th-Percentile Queue Length [veh/ln]	2.27	13.96	24.90	6.78	9.05	8.78	14.50	13.61	13.53
95th-Percentile Queue Length [ft/ln]	56.79	349.01	622.56	169.46	226.35	219.44	362.56	340.30	338.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.33	50.34	106.93	17.36	9.28	9.65	57.90	58.50	59.41	0.00	0.00	0.00
Movement LOS	E	D	F	B	A	A	E	E	E			
d_A, Approach Delay [s/veh]	81.47			12.09			58.47			0.00		
Approach LOS	F			B			E			A		
d_I, Intersection Delay [s/veh]	42.46											
Intersection LOS	D											
Intersection V/C	0.514											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.379

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Base Volume Input [veh/h]	91	134	107	38	87	8	20	615	74	71	866
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	134	107	38	87	8	20	615	74	71	866	98
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	37	30	10	23	2	5	160	19	19	232	26
Total Analysis Volume [veh/h]	101	149	119	40	92	8	21	642	77	76	927	105
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	25	25	25	25	25	62	62	62	62	62	62
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.09	0.08	0.08	0.03	0.05	0.04	0.18	0.05	0.10	0.28	0.29
s, saturation flow rate [veh/h]	1157	1900	1448	1187	1837	555	3618	1425	785	1900	1741
c, Capacity [veh/h]	285	470	358	266	455	316	2243	884	475	1178	1079
d1, Uniform Delay [s]	36.39	30.64	30.77	36.11	29.87	16.30	8.75	7.61	13.09	9.94	10.15
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.14	0.20	0.10	0.09	0.40	0.32	0.19	0.72	1.22	1.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

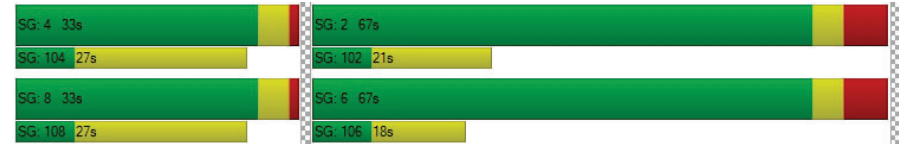
X, volume / capacity	0.35	0.32	0.33	0.15	0.22	0.07	0.29	0.09	0.16	0.45	0.47
d, Delay for Lane Group [s/veh]	36.66	30.79	30.97	36.21	29.96	16.70	9.07	7.80	13.81	11.17	11.62
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.18	2.89	2.32	0.84	1.89	0.31	3.09	0.67	0.99	5.96	5.92
50th-Percentile Queue Length [ft/ln]	54.54	72.23	58.05	20.96	47.23	7.80	77.23	16.78	24.73	148.94	147.94
95th-Percentile Queue Length [veh/ln]	3.93	5.20	4.18	1.51	3.40	0.56	5.56	1.21	1.78	9.96	9.91
95th-Percentile Queue Length [ft/ln]	98.17	130.02	104.49	37.73	85.01	14.04	139.01	30.20	44.51	249.01	247.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.66	30.79	30.97	36.21	29.96	29.96	16.70	9.07	7.80	13.81	11.36	11.62
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	32.45			31.74			9.15			11.56		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	15.27											
Intersection LOS	B											
Intersection V/C	0.379											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 24.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.446

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Base Volume Input [veh/h]	119	214	49	34	193	30	25	314	51	42	218
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	119	214	49	34	193	30	25	314	51	42	218	62
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	58	13	10	57	9	7	91	15	13	66	19
Total Analysis Volume [veh/h]	130	233	53	40	228	35	29	364	59	51	263	75
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No				No
Maximum Recall		No			No			No				No
Pedestrian Recall		No			No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	58	58	58	33	33
g / C, Green / Cycle	0.58	0.58	0.58	0.58	0.58	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.12	0.08	0.08	0.04	0.14	0.28	0.30
s, saturation flow rate [veh/h]	1089	1900	1700	1077	1814	1600	1292
c, Capacity [veh/h]	617	1104	988	645	1054	562	463
d1, Uniform Delay [s]	14.15	9.50	9.56	11.35	10.26	30.68	30.96
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.13	0.16
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	0.25	0.30	0.18	0.57	3.39	6.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

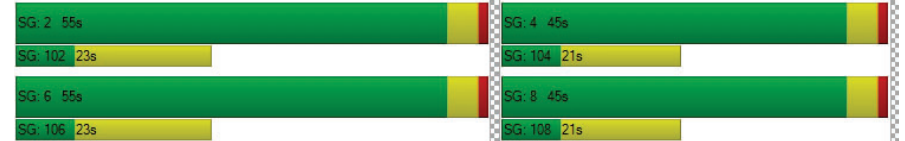
X, volume / capacity	0.21	0.13	0.14	0.06	0.25	0.80	0.84
d, Delay for Lane Group [s/veh]	14.93	9.75	9.86	11.54	10.83	34.07	37.00
Lane Group LOS	B	A	A	B	B	C	D
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.72	1.43	1.38	0.44	2.79	10.16	9.37
50th-Percentile Queue Length [ft/ln]	43.08	35.70	34.59	11.10	69.80	254.00	234.28
95th-Percentile Queue Length [veh/ln]	3.10	2.57	2.49	0.80	5.03	15.39	14.39
95th-Percentile Queue Length [ft/ln]	77.54	64.25	62.25	19.97	125.64	384.69	359.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.93	9.79	9.86	11.54	10.83	10.83	34.07	34.07	34.07	37.00	37.00	37.00
Movement LOS	B	A	A	B	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	11.41			10.92			34.07			37.00		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	24.26											
Intersection LOS	C											
Intersection V/C	0.446											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.348

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	166	296	89	65	202	59	52	412	56	45	266
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	166	296	89	65	202	59	52	412	56	45	266	54
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8553	0.8553	0.8553	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	84	25	18	57	17	15	120	16	14	83	17
Total Analysis Volume [veh/h]	189	337	101	73	228	67	61	482	65	56	332	67
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.17	0.12	0.13	0.08	0.17	0.06	0.15	0.15	0.07	0.17	0.05
s, saturation flow rate [veh/h]	1088	1900	1614	940	1740	1037	1900	1742	851	1900	1400
c, Capacity [veh/h]	215	559	475	231	512	549	1090	999	474	1090	803
d1, Uniform Delay [s]	44.95	28.24	28.62	37.37	29.95	15.48	10.64	10.74	14.88	11.01	9.54
k, delay calibration	0.07	0.04	0.04	0.04	0.06	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.36	0.18	0.24	0.29	0.55	0.41	0.57	0.66	0.51	0.72	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.41	0.44	0.32	0.58	0.11	0.26	0.27	0.12	0.30	0.08
d, Delay for Lane Group [s/veh]	52.31	28.42	28.86	37.66	30.50	15.89	11.21	11.40	15.38	11.73	9.74
Lane Group LOS	D	C	C	D	C	B	B	B	B	B	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.10	4.27	4.04	1.60	5.93	0.85	3.09	3.03	0.77	3.82	0.68
50th-Percentile Queue Length [ft/ln]	127.49	106.82	100.96	39.95	148.37	21.17	77.27	75.63	19.28	95.47	16.88
95th-Percentile Queue Length [veh/ln]	8.80	7.66	7.27	2.88	9.93	1.52	5.56	5.45	1.39	6.87	1.22
95th-Percentile Queue Length [ft/ln]	220.08	191.57	181.72	71.91	248.25	38.10	139.09	136.14	34.71	171.85	30.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.31	28.56	28.86	37.66	30.50	30.50	15.89	11.29	11.40	15.38	11.73	9.74
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	35.77			31.92			11.76			11.89		
Approach LOS	D			C			B			B		
d_I, Intersection Delay [s/veh]	22.71											
Intersection LOS	C											
Intersection V/C	0.348											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 21.0
Level Of Service: C
Volume to Capacity (v/c): 0.379

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	91	418	78	54	123	121	98	327	41	40	359	75
Base Volume Input [veh/h]	91	418	78	54	123	121	98	327	41	40	359	75
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	418	78	54	123	121	98	327	41	40	359	75
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	110	20	15	34	34	26	87	11	11	99	21
Total Analysis Volume [veh/h]	95	439	82	60	137	135	104	348	44	44	397	83
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	28	28	28	28	28	63	63	63	63	63
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.28	0.63	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.15	0.07	0.17	0.11	0.21	0.04	0.21	0.06
s, saturation flow rate [veh/h]	1124	1900	1716	888	1645	981	1832	984	1900	1435
c, Capacity [veh/h]	190	531	479	181	460	583	1151	582	1194	902
d1, Uniform Delay [s]	43.70	30.19	30.47	41.21	31.09	12.82	8.77	12.14	8.71	7.32
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.27	0.34	0.39	0.45	0.67	0.80	0.25	0.75	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.50	0.53	0.33	0.59	0.18	0.34	0.08	0.33	0.09
d, Delay for Lane Group [s/veh]	44.45	30.46	30.80	41.61	31.55	13.49	9.57	12.39	9.46	7.52
Lane Group LOS	D	C	C	D	C	B	A	B	A	A
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.29	5.28	5.09	1.39	5.56	1.29	3.85	0.51	3.87	0.69
50th-Percentile Queue Length [ft/ln]	57.35	132.05	127.15	34.65	139.05	32.37	96.37	12.85	96.71	17.15
95th-Percentile Queue Length [veh/ln]	4.13	9.05	8.78	2.49	9.43	2.33	6.94	0.93	6.96	1.24
95th-Percentile Queue Length [ft/ln]	103.23	226.28	219.62	62.36	235.75	58.26	173.47	23.14	174.08	30.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.45	30.60	30.80	41.61	31.55	31.55	13.49	9.57	9.57	12.39	9.46	7.52
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	32.76			33.36			10.39			9.40		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	21.01											
Intersection LOS	C											
Intersection V/C	0.379											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 23.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.378

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	14	561	71	56	22	156	0	0	0	6	168
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	561	71	56	22	156	0	0	0	6	168	65
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	154	20	17	6	46	0	0	0	2	56	21
Total Analysis Volume [veh/h]	15	617	78	66	26	184	0	0	0	6	222	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	6	49	40
g / C, Green / Cycle	0.39	0.39	0.06	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.17	0.06	0.04	0.13	0.17
s, saturation flow rate [veh/h]	3618	1339	1810	1581	1798
c, Capacity [veh/h]	1404	520	107	780	728
d1, Uniform Delay [s]	22.56	19.87	45.93	14.81	21.35
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.00	0.61	2.17	0.85	1.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

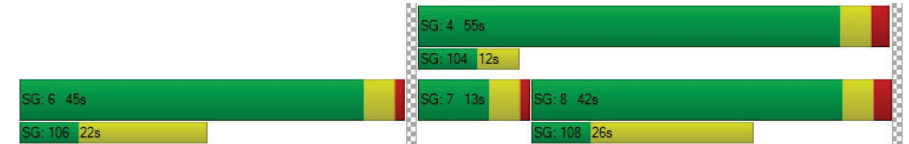
X, volume / capacity	0.44	0.15	0.62	0.27	0.42
d, Delay for Lane Group [s/veh]	23.57	20.48	48.10	15.66	23.15
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.44	1.26	1.64	2.84	5.44
50th-Percentile Queue Length [ft/ln]	135.95	31.39	41.04	70.93	135.94
95th-Percentile Queue Length [veh/ln]	9.26	2.26	2.95	5.11	9.26
95th-Percentile Queue Length [ft/ln]	231.55	56.50	73.87	127.67	231.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	23.57	20.48	48.10	15.66	15.66	0.00	0.00	0.00	0.00	23.15	23.15
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		23.22		23.42		0.00				23.15		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		23.25										
Intersection LOS		C										
Intersection V/C		0.378										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 15.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.360

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	29	133	26	21	108	15	21	348	31	34	282	44
Base Volume Input [veh/h]	29	133	26	21	108	15	21	348	31	34	282	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	133	26	21	108	15	21	348	31	34	282	44
Peak Hour Factor	0.9215	0.9215	0.9215	0.9000	0.9000	0.9000	0.9174	0.9174	0.9174	0.9183	0.9183	0.9183
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	36	7	6	30	4	6	95	8	9	77	12
Total Analysis Volume [veh/h]	31	144	28	23	120	17	23	379	34	37	307	48
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	16	16	74	74	74
g / C, Green / Cycle	0.16	0.16	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.12	0.10	0.24	0.21	0.03
s, saturation flow rate [veh/h]	1696	1670	1816	1617	1576
c, Capacity [veh/h]	317	313	1392	1245	1174
d1, Uniform Delay [s]	39.55	38.39	4.23	3.96	3.34
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.80	0.48	0.59	0.55	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.51	0.31	0.28	0.04
d, Delay for Lane Group [s/veh]	40.35	38.87	4.82	4.51	3.41
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.70	3.57	2.49	1.86	0.22
50th-Percentile Queue Length [ft/ln]	117.44	89.35	62.25	46.54	5.46
95th-Percentile Queue Length [veh/ln]	8.25	6.43	4.48	3.35	0.39
95th-Percentile Queue Length [ft/ln]	206.31	160.82	112.05	83.77	9.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.35	40.35	40.35	38.87	38.87	38.87	4.82	4.82	4.82	4.51	4.51	3.41
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.35			38.87			4.82			4.37		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	15.30											
Intersection LOS	B											
Intersection V/C	0.360											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 16.5
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.468

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	16	78	39	62	105	18	20	555	57	58	286
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	78	39	62	105	18	20	555	57	58	286	42
Peak Hour Factor	0.7916	0.7916	0.7916	0.9068	0.9068	0.9068	0.8681	0.8681	0.8681	0.9554	0.9554	0.9554
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	25	12	17	29	5	6	160	16	15	75	11
Total Analysis Volume [veh/h]	20	99	49	68	116	20	23	639	66	61	299	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	20	20	20	20	67	67	67	67	67	67
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.67	0.67	0.67	0.67	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.02	0.09	0.06	0.08	0.02	0.37	0.05	0.08	0.17	0.03
s, saturation flow rate [veh/h]	1098	1575	1103	1640	973	1710	1377	722	1710	1354
c, Capacity [veh/h]	183	309	172	322	640	1148	924	403	1148	909
d1, Uniform Delay [s]	41.11	35.62	44.04	35.19	8.90	8.61	5.66	16.00	6.53	5.57
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	0.43	0.55	0.33	0.10	1.95	0.15	0.79	0.55	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.48	0.40	0.42	0.04	0.56	0.07	0.15	0.26	0.05
d, Delay for Lane Group [s/veh]	41.20	36.05	44.58	35.52	9.00	10.55	5.81	16.80	7.08	5.67
Lane Group LOS	D	D	D	D	A	B	A	B	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.45	3.17	1.63	2.88	0.22	7.00	0.47	0.90	2.44	0.31
50th-Percentile Queue Length [ft/ln]	11.24	79.30	40.74	71.89	5.59	174.90	11.79	22.48	61.00	7.74
95th-Percentile Queue Length [veh/ln]	0.81	5.71	2.93	5.18	0.40	11.33	0.85	1.62	4.39	0.56
95th-Percentile Queue Length [ft/ln]	20.23	142.73	73.34	129.40	10.07	283.34	21.22	40.47	109.79	13.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.20	36.05	36.05	44.58	35.52	35.52	9.00	10.55	5.81	16.80	7.08	5.67
Movement LOS	D	D	D	D	D	D	A	B	A	B	A	A
d_A, Approach Delay [s/veh]	36.66			38.54			10.07			8.40		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	16.45											
Intersection LOS	B											
Intersection V/C	0.468											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.381

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Base Volume Input [veh/h]	57	219	38	38	168	23	13	355	52	29	287
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	57	219	38	38	168	23	13	355	52	29	287	35
Peak Hour Factor	0.8626	0.8626	0.8626	0.9385	0.9385	0.9385	0.8974	0.8974	0.8974	0.9335	0.9335	0.9335
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	63	11	10	45	6	4	99	14	8	77	9
Total Analysis Volume [veh/h]	66	254	44	40	179	25	14	396	58	31	307	37
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	68	68	68
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.04	0.11	0.22	0.04	0.21
s, saturation flow rate [veh/h]	1154	1831	1090	1823	1879	1572	1771
c, Capacity [veh/h]	201	416	136	414	1316	1070	1244
d1, Uniform Delay [s]	41.84	35.66	45.94	33.62	6.50	5.29	6.38
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.87	0.44	0.34	0.62	0.10	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.72	0.29	0.49	0.31	0.05	0.30
d, Delay for Lane Group [s/veh]	42.19	36.53	46.38	33.96	7.12	5.39	7.01
Lane Group LOS	D	D	D	C	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.56	6.80	0.99	4.36	3.23	0.37	2.91
50th-Percentile Queue Length [ft/ln]	39.04	170.01	24.80	109.07	80.69	9.36	72.79
95th-Percentile Queue Length [veh/ln]	2.81	11.08	1.79	7.79	5.81	0.67	5.24
95th-Percentile Queue Length [ft/ln]	70.28	276.92	44.64	194.70	145.24	16.85	131.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.19	36.53	36.53	46.38	33.96	33.96	7.12	7.12	5.39	7.01	7.01	7.01
Movement LOS	D	D	D	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.56			35.99			6.90			7.01		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.51											
Intersection LOS	B											
Intersection V/C	0.381											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 20.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.397

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	54	225	49	97	195	23	12	467	46	48	417	63
Base Volume Input [veh/h]	54	225	49	97	195	23	12	467	46	48	417	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	225	49	97	195	23	12	467	46	48	417	63
Peak Hour Factor	0.9010	0.9010	0.9010	0.8750	0.8750	0.8750	0.9051	0.9051	0.9051	0.9496	0.9496	0.9496
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	62	14	28	56	7	3	129	13	13	110	17
Total Analysis Volume [veh/h]	60	250	54	111	223	26	13	516	51	51	439	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.05	0.17	0.10	0.13	0.01	0.15	0.15	0.06	0.23	0.04
s, saturation flow rate [veh/h]	1139	1828	1088	1856	961	1900	1824	852	1900	1547
c, Capacity [veh/h]	242	518	200	525	497	1111	1066	490	1111	905
d1, Uniform Delay [s]	38.17	30.80	43.34	29.66	15.77	10.15	10.17	13.78	11.20	9.00
k, delay calibration	0.04	0.07	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	0.72	0.90	0.25	0.10	0.56	0.60	0.43	1.05	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.59	0.56	0.47	0.03	0.26	0.26	0.10	0.40	0.07
d, Delay for Lane Group [s/veh]	38.37	31.53	44.24	29.91	15.87	10.71	10.77	14.20	12.25	9.15
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.34	6.39	2.75	4.99	0.18	3.10	3.04	0.67	5.27	0.64
50th-Percentile Queue Length [ft/ln]	33.50	159.72	68.73	124.83	4.49	77.59	75.94	16.73	131.68	15.90
95th-Percentile Queue Length [veh/ln]	2.41	10.53	4.95	8.66	0.32	5.59	5.47	1.20	9.03	1.14
95th-Percentile Queue Length [ft/ln]	60.30	263.35	123.71	216.45	8.09	139.66	136.69	30.11	225.78	28.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.37	31.53	31.53	44.24	29.91	29.91	15.87	10.74	10.77	14.20	12.25	9.15
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	32.65			34.33			10.86			12.06		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.03											
Intersection LOS	C											
Intersection V/C	0.397											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.487

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	252	346	158	51	280	26	13	682	198	138	929	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	252	346	158	51	280	26	13	682	198	138	929	63
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	92	42	16	87	8	3	179	52	37	247	17
Total Analysis Volume [veh/h]	267	366	167	63	348	32	14	715	208	147	990	67
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.21	0.19	0.11	0.06	0.10	0.10	0.02	0.20	0.14	0.16	0.27	0.05
s, saturation flow rate [veh/h]	1243	1900	1525	1014	1900	1826	573	3618	1487	929	3618	1443
c, Capacity [veh/h]	455	670	538	129	442	425	218	1592	655	522	2008	801
d1, Uniform Delay [s]	26.00	25.94	23.52	47.48	32.75	32.82	28.50	19.53	18.22	11.93	13.63	10.38
k, delay calibration	0.50	0.05	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.41	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.45	0.30	0.12	1.07	0.25	0.27	0.57	0.92	1.27	1.10	0.87	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.55	0.31	0.49	0.43	0.44	0.06	0.45	0.32	0.28	0.49	0.08
d, Delay for Lane Group [s/veh]	31.45	26.24	23.64	48.55	33.00	33.09	29.06	20.45	19.50	13.03	14.49	10.58
Lane Group LOS	C	C	C	D	C	C	C	C	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.41	6.89	2.85	1.59	3.92	3.84	0.29	5.85	3.30	1.64	6.55	0.70
50th-Percentile Queue Length [ft/ln]	135.31	172.29	71.15	39.74	97.88	96.10	7.26	146.31	82.45	41.02	163.84	17.41
95th-Percentile Queue Length [veh/ln]	9.23	11.20	5.12	2.86	7.05	6.92	0.52	9.82	5.94	2.95	10.75	1.25
95th-Percentile Queue Length [ft/ln]	230.70	279.93	128.06	71.54	176.18	172.97	13.06	245.50	148.41	73.84	268.81	31.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.45	26.24	23.64	48.55	33.04	33.09	29.06	20.45	19.50	13.03	14.49	10.58
Movement LOS	C	C	C	D	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	27.43			35.25			20.37			14.10		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	21.76											
Intersection LOS	C											
Intersection V/C	0.487											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 28.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.635

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	174	725	65	19	512	23	17	183	214	39	146	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	174	725	65	19	512	23	17	183	214	39	146	31
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	191	17	6	152	7	5	49	57	11	40	8
Total Analysis Volume [veh/h]	183	764	69	22	606	27	18	194	227	43	160	34
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	56	56	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.56	0.56	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.23	0.03	0.17	0.17	0.22	0.16	0.40	0.02
s, saturation flow rate [veh/h]	958	1900	1822	774	1900	1861	952	1461	502	1508
c, Capacity [veh/h]	641	1058	1015	516	987	967	299	399	180	411
d1, Uniform Delay [s]	7.98	12.61	12.66	7.54	13.87	13.89	30.69	31.30	32.14	27.05
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.21	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.12	1.13	1.20	0.16	0.87	0.89	5.86	0.48	104.48	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.40	0.40	0.04	0.32	0.33	0.71	0.57	1.12	0.08
d, Delay for Lane Group [s/veh]	9.09	13.74	13.86	7.70	14.73	14.78	36.54	31.78	136.62	27.08
Lane Group LOS	A	B	B	A	B	B	D	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.68	5.46	5.34	0.18	4.25	4.20	4.56	4.64	8.64	0.60
50th-Percentile Queue Length [ft/ln]	41.97	136.44	133.40	4.60	106.21	105.09	114.00	116.02	216.05	14.94
95th-Percentile Queue Length [veh/ln]	3.02	9.29	9.12	0.33	7.63	7.57	8.06	8.17	14.30	1.08
95th-Percentile Queue Length [ft/ln]	75.54	232.22	228.10	8.28	190.72	189.15	201.55	204.35	357.60	26.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.09	13.79	13.86	7.70	14.76	14.78	36.54	36.54	31.78	136.62	136.62	27.08
Movement LOS	A	B	B	A	B	B	D	D	C	F	F	C
d_A, Approach Delay [s/veh]	12.95			14.52			34.08			120.91		
Approach LOS	B			B			C			F		
d_I, Intersection Delay [s/veh]	28.24											
Intersection LOS	C											
Intersection V/C	0.635											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.576

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	126	805	96	155	579	30	25	469	204	112	319	150
Base Volume Input [veh/h]	126	805	96	155	579	30	25	469	204	112	319	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	126	805	96	155	579	30	25	469	204	112	319	150
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	207	25	41	153	8	7	130	57	31	88	41
Total Analysis Volume [veh/h]	130	828	99	164	612	32	28	521	227	123	351	165
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	55	44	44	55	44	44	24	24	24	36	36	36
g / C, Green / Cycle	0.55	0.44	0.44	0.55	0.44	0.44	0.24	0.24	0.24	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.25	0.25	0.20	0.17	0.17	0.03	0.21	0.22	0.12	0.18	0.11
s, saturation flow rate [veh/h]	970	1900	1805	821	1900	1853	1007	1900	1578	1012	1900	1450
c, Capacity [veh/h]	553	829	788	445	833	813	145	459	381	306	676	516
d1, Uniform Delay [s]	11.58	21.14	21.24	13.50	19.03	19.06	44.27	36.31	37.15	25.28	25.48	23.44
k, delay calibration	0.28	0.50	0.50	0.50	0.50	0.50	0.04	0.16	0.22	0.22	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	2.83	3.07	2.35	1.37	1.43	0.24	7.00	17.60	1.69	0.23	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

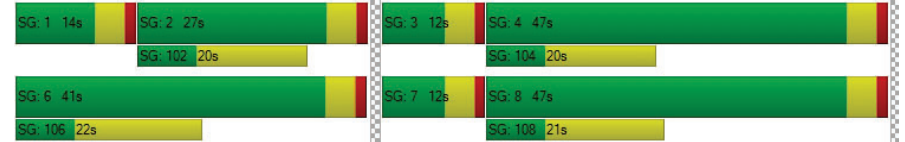
X, volume / capacity	0.24	0.57	0.58	0.37	0.39	0.39	0.19	0.86	0.93	0.40	0.52	0.32
d, Delay for Lane Group [s/veh]	12.15	23.96	24.30	15.85	20.40	20.48	44.51	43.31	54.75	26.97	25.71	23.57
Lane Group LOS	B	C	C	B	C	C	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.42	8.67	8.43	2.01	5.30	5.23	0.67	9.91	10.19	2.13	6.51	2.82
50th-Percentile Queue Length [ft/ln]	35.61	216.78	210.83	50.32	132.51	130.71	16.72	247.75	254.68	53.15	162.75	70.39
95th-Percentile Queue Length [veh/ln]	2.56	13.50	13.20	3.62	9.08	8.98	1.20	15.07	15.42	3.83	10.69	5.07
95th-Percentile Queue Length [ft/ln]	64.10	337.52	329.90	90.57	226.90	224.46	30.09	376.81	385.54	95.67	267.37	126.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.15	24.11	24.30	15.85	20.44	20.48	44.51	46.12	54.75	26.97	25.71	23.57
Movement LOS	B	C	C	B	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	22.66			19.51			48.58			25.40		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	28.55											
Intersection LOS	C											
Intersection V/C	0.576											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 31.9
Level Of Service: C
Volume to Capacity (v/c): 0.622

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	165	967	100	51	848	57	50	222	207	129	229	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	967	100	51	848	57	50	222	207	129	229	72
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	262	27	14	231	16	13	57	54	35	62	19
Total Analysis Volume [veh/h]	179	1049	108	55	923	62	52	230	214	139	247	78
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	11	51	51	36	36	36	26	26	26	35	35
g / C, Green / Cycle	0.11	0.51	0.51	0.36	0.36	0.36	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.10	0.31	0.32	0.11	0.26	0.27	0.05	0.12	0.16	0.29	0.06
s, saturation flow rate [veh/h]	1810	1900	1778	493	1900	1814	1151	1900	1352	1352	1366
c, Capacity [veh/h]	194	978	916	128	688	657	73	488	347	480	482
d1, Uniform Delay [s]	44.25	17.02	17.31	44.22	27.58	27.82	50.00	31.41	32.81	28.81	22.20
k, delay calibration	0.10	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.09	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.28	2.71	3.18	10.19	6.52	7.40	4.86	0.26	1.54	13.31	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.60	0.62	0.43	0.72	0.74	0.72	0.47	0.62	0.80	0.16
d, Delay for Lane Group [s/veh]	59.52	19.73	20.50	54.41	34.10	35.23	54.86	31.68	34.35	42.12	22.25
Lane Group LOS	E	B	C	D	C	D	D	C	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.18	9.73	9.71	1.71	11.25	11.22	1.38	4.62	4.60	9.00	1.24
50th-Percentile Queue Length [ft/ln]	129.54	243.37	242.71	42.67	281.19	280.49	34.51	115.49	115.07	225.05	30.90
95th-Percentile Queue Length [veh/ln]	8.91	14.85	14.82	3.07	16.75	16.71	2.48	8.14	8.12	13.92	2.23
95th-Percentile Queue Length [ft/ln]	222.87	371.29	370.46	76.81	418.70	417.82	62.12	203.62	203.04	348.07	55.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.52	20.07	20.50	54.41	34.62	35.23	54.86	31.68	34.35	42.12	42.12	22.25
Movement LOS	E	C	C	D	C	D	D	C	C	D	D	C
d_A, Approach Delay [s/veh]	25.39		35.70			35.26			38.78			
Approach LOS	C		D			D			D			
d_I, Intersection Delay [s/veh]	31.94											
Intersection LOS	C											
Intersection V/C	0.622											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 44.3
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.584

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	166	1092	54	19	1124	24	6	75	161	66	165	91
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	166	1092	54	19	1124	24	6	75	161	66	165	91
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	288	14	5	293	6	2	22	48	18	46	26
Total Analysis Volume [veh/h]	175	1152	57	20	1171	25	7	89	190	70	186	102
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	38	38	3	30	30	40	40
g / C, Green / Cycle	0.12	0.40	0.40	0.03	0.32	0.32	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.10	0.32	0.32	0.01	0.32	0.32	0.17	0.16
s, saturation flow rate [veh/h]	1810	1900	1853	1810	1900	1877	1646	1771
c, Capacity [veh/h]	210	760	742	58	601	594	695	747
d1, Uniform Delay [s]	41.00	25.09	25.23	44.88	32.37	32.40	19.07	18.92
k, delay calibration	0.06	0.44	0.45	0.04	0.43	0.43	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.78	7.65	8.39	1.28	33.37	35.09	1.73	1.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

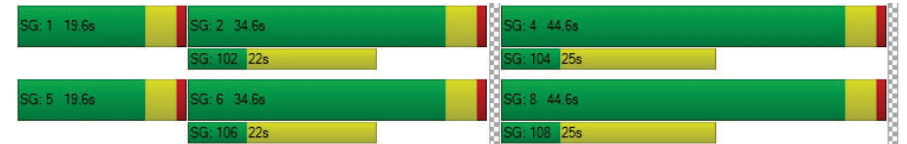
X, volume / capacity	0.83	0.80	0.81	0.34	1.00	1.00	0.40	0.39
d, Delay for Lane Group [s/veh]	45.78	32.74	33.62	46.16	65.75	67.49	20.80	20.42
Lane Group LOS	D	C	C	D	E	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	4.23	13.15	13.17	0.48	18.82	18.91	4.48	4.55
50th-Percentile Queue Length [ft/ln]	105.74	328.82	329.26	11.95	470.57	472.80	111.88	113.80
95th-Percentile Queue Length [veh/ln]	7.60	19.10	19.12	0.86	25.94	26.10	7.94	8.05
95th-Percentile Queue Length [ft/ln]	190.07	477.52	478.05	21.52	648.45	652.62	198.61	201.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.78	33.15	33.62	46.16	66.60	67.49	0.00	20.80	20.80	0.00	20.42	20.42
Movement LOS	D	C	C	D	E	E		C	C		C	C
d_A, Approach Delay [s/veh]	34.77			66.28			20.80			20.42		
Approach LOS	C			E			C			C		
d_I, Intersection Delay [s/veh]	44.33											
Intersection LOS	D											
Intersection V/C	0.584											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 50.9
 Level Of Service: D
 Volume to Capacity (v/c): 0.815

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	316	666	0	1323	48	0	0	0	0	700	547
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	316	666	0	1323	48	0	0	0	0	700	547	698
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	191	0	348	13	0	0	0	0	193	150	192
Total Analysis Volume [veh/h]	363	765	0	1394	51	0	0	0	0	770	602	768
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.20	0.21	0.27	0.26	0.30	0.29	0.31	0.35
s, saturation flow rate [veh/h]	1810	3618	3618	1861	1810	1862	1583	1573
c, Capacity [veh/h]	337	2123	1310	674	609	626	533	529
d1, Uniform Delay [s]	48.76	12.98	33.25	32.92	37.84	37.38	38.51	39.77
k, delay calibration	0.46	0.50	0.50	0.50	0.36	0.33	0.39	0.47
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	69.02	0.48	3.71	6.38	14.26	11.10	21.63	47.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.08	0.36	0.74	0.71	0.90	0.87	0.94	1.03
d, Delay for Lane Group [s/veh]	117.79	13.45	36.96	39.30	52.10	48.48	60.14	86.86
Lane Group LOS	F	B	D	D	D	D	E	F
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	16.51	5.42	12.74	13.14	16.96	16.30	16.67	21.71
50th-Percentile Queue Length [ft/ln]	412.75	135.50	318.46	328.43	423.9	407.5	416.7	542.7
95th-Percentile Queue Length [veh/ln]	24.08	9.24	18.59	19.08	23.71	22.92	23.37	30.03
95th-Percentile Queue Length [ft/ln]	601.94	230.96	464.79	477.04	592.7	573.0	584.2	750.6

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	117.79	13.45	0.00	0.00	37.68	39.30	0.00	0.00	0.00	51.00	53.85	79.28
Movement LOS	F	B			D	D				D	D	E
d_A, Approach Delay [s/veh]	47.03		37.74		0.00		61.94					
Approach LOS	D		D		A		E					
d_I, Intersection Delay [s/veh]	50.95											
Intersection LOS	D											
Intersection V/C	0.815											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 36.3
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.750

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	833	714	757	1236	0	113	104	320	0	0	0	0
Base Volume Input [veh/h]	0	833	714	757	1236	0	113	104	320	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	833	714	757	1236	0	113	104	320	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	231	198	203	332	0	32	30	92	0	0	0
Total Analysis Volume [veh/h]	0	924	792	813	1327	0	130	119	367	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No	No	Yes	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	37	37	37	43	85	25	25	25
g / C, Green / Cycle	0.31	0.31	0.31	0.36	0.71	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.29	0.23	0.37	0.07	0.07	0.23
s, saturation flow rate [veh/h]	3618	1501	1501	3514	3618	1810	1729	1579
c, Capacity [veh/h]	1124	466	466	1273	2574	383	366	334
d1, Uniform Delay [s]	37.35	39.90	39.90	31.73	7.88	40.15	40.02	47.28
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.37
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	3.26	3.26	2.46	0.74	0.19	0.19	71.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.92	0.92	0.64	0.52	0.34	0.32	1.10
d, Delay for Lane Group [s/veh]	37.77	43.16	43.16	34.18	8.63	40.34	40.21	118.59
Lane Group LOS	D	D	D	C	A	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.23	12.35	12.35	10.15	7.32	3.26	2.98	16.45
50th-Percentile Queue Length [ft/ln]	280.80	308.79	308.79	253.70	182.89	81.62	74.48	411.20
95th-Percentile Queue Length [veh/ln]	16.73	18.12	18.12	15.37	11.75	5.88	5.36	24.28
95th-Percentile Queue Length [ft/ln]	418.21	452.88	452.88	384.31	293.78	146.91	134.07	607.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	37.77	43.16	34.18	8.63	0.00	40.34	40.21	118.59	0.00	0.00	0.00
Movement LOS		D	D	C	A		D	D	F			
d_A, Approach Delay [s/veh]		40.46		18.34			86.93			0.00		
Approach LOS		D		B			F			A		
d_I, Intersection Delay [s/veh]		36.28										
Intersection LOS		D										
Intersection V/C		0.750										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 39.3
Level Of Service: D
Volume to Capacity (v/c): 0.559

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	579	256	94	811	132	178
Base Volume Input [veh/h]	579	256	94	811	132	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	579	256	94	811	132	178
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	162	71	29	254	38	51
Total Analysis Volume [veh/h]	646	286	118	1017	152	204
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.18	0.21	0.15	0.28	0.18	0.28
s, saturation flow rate [veh/h]	3618	1353	776	3618	832	734
c, Capacity [veh/h]	2509	938	541	2509	145	128
d1, Uniform Delay [s]	5.72	5.96	9.22	6.53	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.10	0.36
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	0.84	0.92	0.49	45.40	291.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.30	0.22	0.41	1.05	1.59
d, Delay for Lane Group [s/veh]	5.97	6.80	10.15	7.02	86.67	332.70
Lane Group LOS	A	A	B	A	F	F
Critical Lane Group	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.30	2.26	1.27	4.15	5.32	13.45
50th-Percentile Queue Length [ft/ln]	57.44	56.45	31.64	103.68	133.01	336.31
95th-Percentile Queue Length [veh/ln]	4.14	4.06	2.28	7.47	9.28	23.01
95th-Percentile Queue Length [ft/ln]	103.39	101.61	56.95	186.63	232.06	575.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.97	6.80	10.15	7.02	86.67	332.70
Movement LOS	A	A	B	A	F	F
d_A, Approach Delay [s/veh]	6.22		7.35		227.65	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	39.28					
Intersection LOS	D					
Intersection V/C	0.559					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 71.0
Level Of Service: E
Volume to Capacity (v/c): 0.588

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TT			TT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	23	237	153	240	179	22	74	253	51	49	225	112
Base Volume Input [veh/h]	23	237	153	240	179	22	74	253	51	49	225	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	237	153	240	179	22	74	253	51	49	225	112
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	67	43	67	50	6	19	66	13	14	66	33
Total Analysis Volume [veh/h]	26	266	172	270	201	25	78	265	53	57	263	131
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	49	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.55	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.26	0.25	0.12	0.08	0.18	0.05	0.26
s, saturation flow rate [veh/h]	1230	1689	1083	1832	1006	1793	1074	1514
c, Capacity [veh/h]	814	874	638	1005	80	327	80	276
d1, Uniform Delay [s]	6.57	14.16	9.12	10.47	45.02	36.58	45.02	36.81
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	2.05	2.06	0.52	22.84	9.00	4.29	199.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

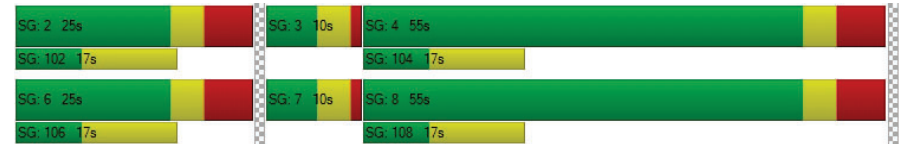
X, volume / capacity	0.03	0.50	0.42	0.22	0.97	0.97	0.71	1.43
d, Delay for Lane Group [s/veh]	6.57	16.21	11.17	10.99	67.86	45.58	49.31	235.83
Lane Group LOS	A	B	B	B	E	D	D	F
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.17	5.81	2.41	2.31	2.23	7.61	1.34	21.13
50th-Percentile Queue Length [ft/ln]	4.14	145.15	60.30	57.76	55.84	190.17	33.59	528.16
95th-Percentile Queue Length [veh/ln]	0.30	9.76	4.34	4.16	4.02	12.13	2.42	33.34
95th-Percentile Queue Length [ft/ln]	7.45	243.94	108.54	103.97	100.51	303.25	60.46	833.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.57	16.21	16.21	11.17	10.99	10.99	67.86	45.58	45.58	49.31	235.83	235.83
Movement LOS	A	B	B	B	B	B	E	D	D	D	F	F
d_A, Approach Delay [s/veh]	15.67			11.09			49.97			212.26		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	70.99											
Intersection LOS	E											
Intersection V/C	0.588											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 32.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.523

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				No				Yes			

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Base Volume Input [veh/h]	36	0	888	110	268	948	0	32	1085	209	74	0	192				
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	0	888	110	268	948	0	32	1085	209	74	0	192				
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012		
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	238	30	74	261	0	8	271	52	23	0	60				
Total Analysis Volume [veh/h]	36	0	953	118	296	1045	0	32	1085	209	92	0	240				
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk			No			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	104	104	117	109	23	23
g / C, Green / Cycle	0.03	0.69	0.69	0.78	0.73	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.26	0.07	0.41	0.29	0.07	0.21
s, saturation flow rate [veh/h]	1810	3618	1584	714	3618	1231	1132
c, Capacity [veh/h]	47	2511	1099	563	2625	192	177
d1, Uniform Delay [s]	72.54	9.53	7.58	6.16	7.93	57.66	63.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.48
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.20	0.44	0.20	3.49	0.45	0.69	191.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.38	0.11	0.53	0.40	0.48	1.36
d, Delay for Lane Group [s/veh]	81.74	9.97	7.78	9.65	8.38	58.35	254.88
Lane Group LOS	F	A	A	A	A	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.50	6.53	1.32	2.73	6.43	3.24	16.18
50th-Percentile Queue Length [ft/ln]	37.61	163.13	32.90	68.25	160.84	81.12	404.40
95th-Percentile Queue Length [veh/ln]	2.71	10.71	2.37	4.91	10.59	5.84	25.79
95th-Percentile Queue Length [ft/ln]	67.70	267.87	59.22	122.84	264.83	146.01	644.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	81.74	0.00	9.97	7.78	9.65	8.38	0.00	0.00	0.00	0.00	58.35	0.00	254.88
Movement LOS	F		A	A	A	A					E		F
d_A, Approach Delay [s/veh]	12.07			8.66			0.00			200.42			
Approach LOS	B			A			A			F			
d_I, Intersection Delay [s/veh]	32.92												
Intersection LOS	C												
Intersection V/C	0.523												

Sequence

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



APPROVAL YEAR (2020) NO PROJECT CONDITIONS

Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 69.2
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.196

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	10	2570	2	310	3460	30	10	10	10	250	20	250
Base Volume Input [veh/h]	10	2570	2	310	3460	30	10	10	10	250	20	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	2570	2	310	3460	30	10	10	10	250	20	250
Peak Hour Factor	0.8779	0.8779	1.0000	0.9383	0.9383	0.9383	0.8500	0.8500	0.8500	0.9161	0.9161	0.9161
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	732	1	83	922	8	3	3	3	68	5	68
Total Analysis Volume [veh/h]	11	2927	2	330	3687	32	12	12	12	273	22	273
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	6	25	0	6	25	0	6	6	0	0	6	6	
Maximum Green [s]	15	142	0	60	187	0	38	38	0	0	38	38	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	2.0	2.0	
Split [s]	15	142	0	60	187	0	40	40	0	0	40	40	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	5	5	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	13	13	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	3.2	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	Yes	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	240	240	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	5.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	3.20	0.00
g_i, Effective Green Time [s]	3	144	46	186	186	36	35	86
g / C, Green / Cycle	0.01	0.60	0.19	0.78	0.78	0.15	0.15	0.36
(v / s)_i Volume / Saturation Flow Rate	0.01	0.57	0.18	0.67	0.68	0.18	0.45	0.17
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1892	196	659	1594
c, Capacity [veh/h]	24	3095	347	2808	1468	49	124	571
d1, Uniform Delay [s]	117.59	44.66	95.96	18.45	18.62	92.54	106.79	59.66
k, delay calibration	0.04	0.50	0.23	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	7.70	22.79	3.96	7.41	64.51	640.84	2.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

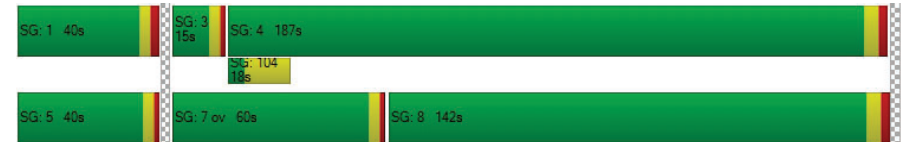
X, volume / capacity	0.46	0.95	0.95	0.87	0.87	0.73	2.37	0.48
d, Delay for Lane Group [s/veh]	122.72	52.36	118.75	22.41	26.03	157.05	747.62	62.51
Lane Group LOS	F	D	F	C	C	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.72	54.37	22.52	43.98	48.01	3.18	30.12	13.68
50th-Percentile Queue Length [ft/ln]	18.07	1359.37	562.95	1099.55	1200.22	79.51	752.99	341.93
95th-Percentile Queue Length [veh/ln]	1.30	66.47	30.30	54.86	59.37	5.72	49.19	19.74
95th-Percentile Queue Length [ft/ln]	32.52	1661.70	757.51	1371.46	1484.31	143.11	1229.66	493.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	122.72	52.36	0.00	118.75	23.64	26.03	157.05	157.05	157.05	747.62	747.62	62.51
Movement LOS	F	D		F	C	C	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	52.63			31.41			157.05			418.33		
Approach LOS	D			C			F			F		
d_I, Intersection Delay [s/veh]	69.17											
Intersection LOS	E											
Intersection V/C	1.196											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 72.2
Level Of Service: E
Volume to Capacity (v/c): 0.937

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration	T T			T T			T T			T T			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Base Volume Input [veh/h]	150	370	80	10	480	190	50	110	250	0	40	150	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	370	80	10	480	190	50	110	250	0	40	150	50
Peak Hour Factor	0.8497	0.8497	0.8497	0.9162	0.9162	0.9162	0.8326	0.8326	0.8326	1.0000	0.941	0.941	0.941
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	109	24	3	131	52	15	33	75	0	11	40	13
Total Analysis Volume [veh/h]	177	435	94	11	524	207	60	132	300	0	42	159	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	32			62			86			124			
Bicycle Volume [bicycles/h]	1			14			14			39			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	77.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	62	62	1	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.62	0.62	0.01	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.23	0.07	0.01	0.28	0.14	0.51	0.19	0.38	0.04
s, saturation flow rate [veh/h]	1810	1900	1425	1810	1900	1441	379	1542	535	1212
c, Capacity [veh/h]	189	1185	889	24	1013	768	117	578	142	224
d1, Uniform Delay [s]	44.46	9.17	7.57	48.94	15.04	12.72	40.18	24.26	39.06	34.76
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.50	0.13	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.87	0.88	0.24	4.72	1.89	0.86	322.37	0.86	222.12	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

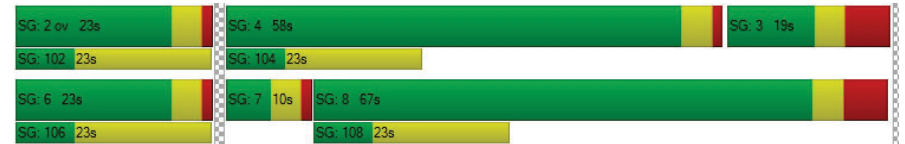
X, volume / capacity	0.94	0.37	0.11	0.45	0.52	0.27	1.64	0.52	1.41	0.24
d, Delay for Lane Group [s/veh]	53.33	10.05	7.81	53.66	16.92	13.58	362.55	25.12	261.18	34.96
Lane Group LOS	D	B	A	D	B	B	F	C	F	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.78	4.55	0.82	0.30	7.82	2.62	13.44	5.62	12.28	1.10
50th-Percentile Queue Length [ft/ln]	119.51	113.69	20.47	7.59	195.41	65.45	335.94	140.51	307.11	27.39
95th-Percentile Queue Length [veh/ln]	8.37	8.04	1.47	0.55	12.40	4.71	23.20	9.51	20.70	1.97
95th-Percentile Queue Length [ft/ln]	209.15	201.12	36.84	13.66	310.04	117.81	579.89	237.71	517.58	49.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.33	10.05	7.81	53.66	16.92	13.58	362.55	362.55	25.12	261.1	261.1	261.1	34.96
Movement LOS	D	B	A	D	B	B	F	F	C	F	F	F	C
d_A, Approach Delay [s/veh]	20.60			16.54			156.80			213.98			
Approach LOS	C			B			F			F			
d_I, Intersection Delay [s/veh]	72.16												
Intersection LOS	E												
Intersection V/C	0.937												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	12.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.299

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	460	250	220	570	160	120
Base Volume Input [veh/h]	460	250	220	570	160	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	460	250	220	570	160	120
Peak Hour Factor	0.9089	0.9089	0.8739	0.8739	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	127	69	63	163	45	34
Total Analysis Volume [veh/h]	506	275	252	652	180	135
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31		38		61	
Bicycle Volume [bicycles/h]	1		2		18	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	61	61	73	73	14	14	14
g / C, Green / Cycle	0.61	0.61	0.73	0.73	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.25	0.18	0.06	0.06	0.07
s, saturation flow rate [veh/h]	3618	1548	1027	3618	1691	1739	1430
c, Capacity [veh/h]	2204	943	792	2625	241	248	204
d1, Uniform Delay [s]	8.87	9.28	4.69	4.59	39.31	39.15	39.51
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.78	1.06	0.23	0.50	0.44	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

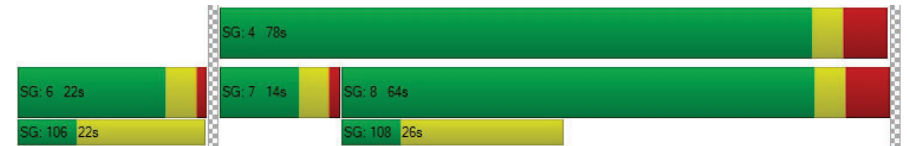
X, volume / capacity	0.23	0.29	0.32	0.25	0.46	0.43	0.49
d, Delay for Lane Group [s/veh]	9.12	10.07	5.74	4.82	39.82	39.58	40.18
Lane Group LOS	A	B	A	A	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.42	2.87	1.62	1.97	2.49	2.39	2.27
50th-Percentile Queue Length [ft/ln]	60.40	71.69	40.47	49.14	62.29	59.82	56.77
95th-Percentile Queue Length [veh/ln]	4.35	5.16	2.91	3.54	4.48	4.31	4.09
95th-Percentile Queue Length [ft/ln]	108.71	129.04	72.84	88.45	112.11	107.68	102.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.12	10.07	5.74	4.82	39.72	40.04
Movement LOS	A	B	A	A	D	D
d_A, Approach Delay [s/veh]	9.45		5.08		39.85	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	12.26					
Intersection LOS	B					
Intersection V/C	0.299					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	6.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.256

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	670	130	90	600	30	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	670	130	90	600	30	40
Peak Hour Factor	0.9190	0.9190	0.9144	0.9144	0.7609	0.7609
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	35	25	164	10	13
Total Analysis Volume [veh/h]	729	141	98	656	39	53
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34		38		77	
Bicycle Volume [bicycles/h]	3		4		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	73	73	73	73	14
g / C, Green / Cycle	0.73	0.73	0.73	0.73	0.14
(v / s)_i Volume / Saturation Flow Rate	0.20	0.09	0.13	0.18	0.05
s, saturation flow rate [veh/h]	3618	1496	733	3618	1692
c, Capacity [veh/h]	2627	1086	535	2627	240
d1, Uniform Delay [s]	4.69	4.14	7.83	4.58	38.89
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.25	0.75	0.23	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.13	0.18	0.25	0.38
d, Delay for Lane Group [s/veh]	4.96	4.38	8.58	4.81	39.27
Lane Group LOS	A	A	A	A	D
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.25	0.81	0.94	1.97	2.04
50th-Percentile Queue Length [ft/ln]	56.25	20.23	23.56	49.34	51.00
95th-Percentile Queue Length [veh/ln]	4.05	1.46	1.70	3.55	3.67
95th-Percentile Queue Length [ft/ln]	101.25	36.41	42.42	88.81	91.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.96	4.38	8.58	4.81	39.27	39.27
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	4.86		5.30		39.27	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	6.90					
Intersection LOS	A					
Intersection V/C	0.256					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.303

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	740	150	90	550	70	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	740	150	90	550	70	70
Peak Hour Factor	0.9233	0.9233	0.9315	0.9315	0.7866	0.7866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	200	41	24	148	22	22
Total Analysis Volume [veh/h]	801	162	97	590	89	89
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	78		64		77	
Bicycle Volume [bicycles/h]	5		4		17	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	67	67	78	78	8	20
g / C, Green / Cycle	0.67	0.67	0.78	0.78	0.08	0.20
(v / s)_i Volume / Saturation Flow Rate	0.22	0.11	0.12	0.16	0.06	0.06
s, saturation flow rate [veh/h]	3618	1487	826	3618	1378	1418
c, Capacity [veh/h]	2419	994	689	2836	116	283
d1, Uniform Delay [s]	7.05	6.16	3.02	2.79	44.83	34.18
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.35	0.43	0.17	4.01	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.16	0.14	0.21	0.77	0.31
d, Delay for Lane Group [s/veh]	7.42	6.51	3.44	2.95	48.84	34.42
Lane Group LOS	A	A	A	A	D	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.37	1.25	0.40	1.16	2.28	1.86
50th-Percentile Queue Length [ft/ln]	84.37	31.16	10.02	29.06	56.88	46.40
95th-Percentile Queue Length [veh/ln]	6.07	2.24	0.72	2.09	4.10	3.34
95th-Percentile Queue Length [ft/ln]	151.86	56.08	18.03	52.30	102.38	83.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.42	6.51	3.44	2.95	48.84	34.42
Movement LOS	A	A	A	A	D	C
d_A, Approach Delay [s/veh]	7.27		3.02		41.63	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				9.02		
Intersection LOS				A		
Intersection V/C				0.303		

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.368

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	20	820	142	67	590	10	20	13	10	100	20	130
Base Volume Input [veh/h]	20	820	142	67	590	10	20	13	10	100	20	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	820	142	67	590	10	20	13	10	100	20	130
Peak Hour Factor	0.9547	0.9547	0.8613	0.9469	0.9024	0.9024	0.6667	0.5455	0.6667	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	215	41	18	163	3	7	6	4	29	6	38
Total Analysis Volume [veh/h]	21	859	165	71	654	11	30	24	15	118	24	153
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			17		
Bicycle Volume [bicycles/h]	20			23			24			47		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	41.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	51	0	0	39	27	17	0	39	12	25	17
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	65	65	58	58	5	15	15
g / C, Green / Cycle	0.54	0.54	0.48	0.48	0.05	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.02	0.24	0.18	0.18	0.03	0.08	0.10
s, saturation flow rate [veh/h]	865	3618	1900	1886	1740	1824	1458
c, Capacity [veh/h]	468	1960	916	909	79	224	179
d1, Uniform Delay [s]	13.59	16.53	19.52	19.55	56.12	50.12	51.64
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.71	1.12	1.14	2.35	1.12	4.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

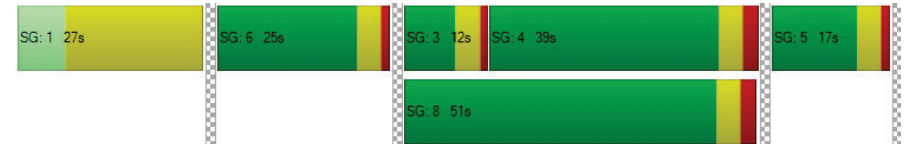
X, volume / capacity	0.04	0.44	0.36	0.37	0.57	0.64	0.86
d, Delay for Lane Group [s/veh]	13.60	17.25	20.64	20.69	58.47	51.24	56.15
Lane Group LOS	B	B	C	C	E	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.26	7.17	6.07	6.09	1.38	4.17	4.77
50th-Percentile Queue Length [ft/ln]	6.62	179.24	151.86	152.16	34.46	104.15	119.28
95th-Percentile Queue Length [veh/ln]	0.48	11.56	10.12	10.13	2.48	7.50	8.35
95th-Percentile Queue Length [ft/ln]	11.92	289.02	252.90	253.32	62.02	187.47	208.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.60	17.25	0.00	0.00	20.66	20.69	58.47	0.00	58.47	51.24	51.24	56.15
Movement LOS	B	B			C	C	E		E	D	D	E
d_A, Approach Delay [s/veh]	17.16		20.66			58.47			53.79			
Approach LOS	B		C			E			D			
d_I, Intersection Delay [s/veh]	25.11											
Intersection LOS	C											
Intersection V/C	0.368											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 24.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.439

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	470	780	690	30	60	460
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	470	780	690	30	60	460
Peak Hour Factor	0.9091	0.9091	0.9306	0.9306	0.8533	0.8533
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	129	215	185	8	18	135
Total Analysis Volume [veh/h]	517	858	741	32	70	539
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		0		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	71	71	71	25	24
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	80	80	80	6	30
g / C, Green / Cycle	0.16	0.67	0.67	0.67	0.05	0.25
(v / s)_i Volume / Saturation Flow Rate	0.15	0.24	0.20	0.02	0.04	0.20
s, saturation flow rate [veh/h]	3514	3618	3618	1615	1810	2668
c, Capacity [veh/h]	569	2423	2423	1082	96	677
d1, Uniform Delay [s]	49.37	8.58	8.23	6.68	55.90	41.86
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.37	0.41	0.33	0.05	3.86	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

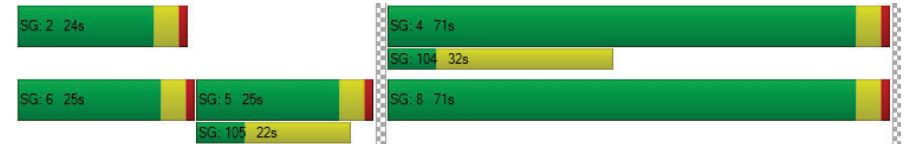
X, volume / capacity	0.91	0.35	0.31	0.03	0.73	0.80
d, Delay for Lane Group [s/veh]	51.74	8.98	8.56	6.73	59.76	42.69
Lane Group LOS	D	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.78	4.70	3.89	0.28	2.29	7.96
50th-Percentile Queue Length [ft/ln]	194.39	117.52	97.29	7.00	57.22	198.98
95th-Percentile Queue Length [veh/ln]	12.35	8.26	7.00	0.50	4.12	12.59
95th-Percentile Queue Length [ft/ln]	308.72	206.42	175.11	12.61	103.00	314.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.74	8.98	8.56	6.73	59.76	42.69
Movement LOS	D	A	A	A	E	D
d_A, Approach Delay [s/veh]	25.06		8.48		44.65	
Approach LOS	C		A		D	
d_I, Intersection Delay [s/veh]	24.74					
Intersection LOS	C					
Intersection V/C	0.439					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 20.4
Level Of Service: C
Volume to Capacity (v/c): 0.491

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Northbound				Northeastbound				Southwestbound			
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	40	110	20	3	180	98	120	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	40	110	20	3	180	98	120	180
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.9268	0.9268	0.9268	1.0000	0.9489	0.9471	0.9471	0.9471
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	11	30	5	1	47	26	32	48
Total Analysis Volume [veh/h]	0	0	0	0	43	119	22	3	190	103	127	190
Presence of On-Street Parking					No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	12				27				48			
Bicycle Volume [bicycles/h]	10				7				36			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	15	30	30	0	7	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	19	35	43	0	12	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	22	13	0	0	0	20	0
Rest in Walk						No					No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall						No			Yes		No	
Maximum Recall						No			No		No	
Pedestrian Recall						No			No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	31	31	31
g / C, Green / Cycle	0.21	0.21	0.21	0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.03	0.04	0.04	0.13	0.07	0.13
s, saturation flow rate [veh/h]	1256	1900	1758	1440	1900	1518
c, Capacity [veh/h]	265	409	378	583	662	529
d1, Uniform Delay [s]	33.92	28.83	28.90	21.43	20.50	21.87
k, delay calibration	0.11	0.11	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.20	0.23	1.48	0.14	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.17	0.18	0.33	0.19	0.36
d, Delay for Lane Group [s/veh]	34.20	29.03	29.13	22.91	20.64	22.28
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.83	1.25	1.23	3.04	1.82	2.93
50th-Percentile Queue Length [ft/ln]	20.82	31.13	30.67	76.06	45.55	73.18
95th-Percentile Queue Length [veh/ln]	1.50	2.24	2.21	5.48	3.28	5.27
95th-Percentile Queue Length [ft/ln]	37.47	56.03	55.21	136.92	81.99	131.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	34.20	29.07	29.13	0.00	22.91	0.00	20.64	22.28
Movement LOS					C	C	C		C		C	C
d_A, Approach Delay [s/veh]	0.00				30.28				22.11			
Approach LOS	A				C				C			
d_I, Intersection Delay [s/veh]	20.40											
Intersection LOS	C											
Intersection V/C	0.491											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	1140	180	110	680	65	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	1140	180	110	680	65	20
Peak Hour Factor	1.0000	0.9525	0.9525	0.9525	0.9353	0.9353	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	299	47	29	182	17	5
Total Analysis Volume [veh/h]	1	52	1197	189	118	727	69	21
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	46				31			
Bicycle Volume [bicycles/h]	10				12			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	30	30	15	30	0	30
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	24	35	19	43	0	35
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	22	0	13	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			Yes		No	Yes		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	50	50	50
g / C, Green / Cycle	0.45	0.45	0.45	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.07	0.33	0.12	0.17	0.20	0.20
s, saturation flow rate [veh/h]	722	3618	1537	675	1900	1875
c, Capacity [veh/h]	301	1610	684	357	1044	1030
d1, Uniform Delay [s]	23.41	20.74	15.82	14.56	11.39	11.40
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	3.16	1.00	2.47	0.97	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

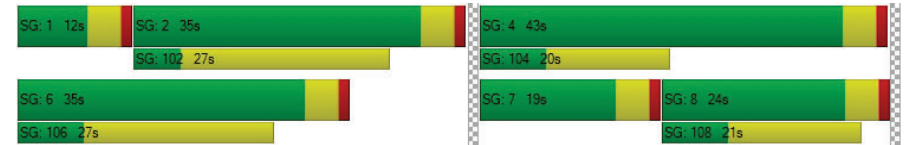
X, volume / capacity	0.17	0.74	0.28	0.33	0.36	0.36
d, Delay for Lane Group [s/veh]	24.66	23.90	16.83	17.02	12.35	12.38
Lane Group LOS	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.92	10.53	2.56	1.30	4.20	4.17
50th-Percentile Queue Length [ft/ln]	22.88	263.17	63.91	32.54	105.06	104.24
95th-Percentile Queue Length [veh/ln]	1.65	15.85	4.60	2.34	7.56	7.51
95th-Percentile Queue Length [ft/ln]	41.18	396.19	115.04	58.57	189.11	187.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.66	23.90	16.83	17.02	12.37	0.00	12.38
Movement LOS		C	C	B	B	B		B
d_A, Approach Delay [s/veh]		23.00			13.00			
Approach LOS		C			B			
d_I, Intersection Delay [s/veh]		20.40						
Intersection LOS		C						
Intersection V/C		0.491						

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 36.3
 Level Of Service: D
 Volume to Capacity (v/c): 0.364

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	40	80	130	0	20	70	40	0	30	300	60	0	80	270	50
Base Volume Input [veh/h]	0	40	80	130	0	20	70	40	0	30	300	60	0	80	270	50
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	40	80	130	0	20	70	40	0	30	300	60	0	80	270	50
Peak Hour Factor	1.000	0.924	0.924	0.924	1.000	0.803	0.803	0.803	1.000	0.662	0.662	0.662	1.000	0.962	0.962	0.962
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	22	35	0	6	22	12	0	11	113	23	0	21	70	13
Total Analysis Volume [veh/h]	0	43	87	141	0	25	87	50	0	45	453	91	0	83	281	52
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	307				0				6				14			
Bicycle Volume [bicycles/h]	1				8				9				31			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.24	0.04	0.13	0.06	0.09	0.09	0.09
s, saturation flow rate [veh/h]	1272	1698	678	1064	3618	1589	953	1900	1770
c, Capacity [veh/h]	73	263	140	491	1709	751	426	898	836
d1, Uniform Delay [s]	50.01	41.24	41.96	19.18	15.91	14.76	21.63	15.28	15.33
k, delay calibration	0.04	0.04	0.22	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.76	3.35	99.73	0.37	0.38	0.33	1.02	0.47	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

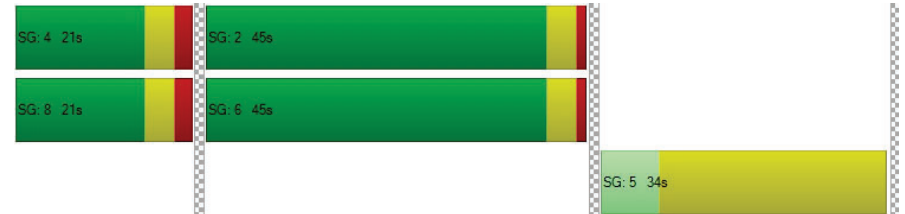
X, volume / capacity	0.59	0.87	1.16	0.09	0.27	0.12	0.19	0.19	0.20
d, Delay for Lane Group [s/veh]	52.77	44.60	141.70	19.55	16.29	15.09	22.65	15.75	15.86
Lane Group LOS	D	D	F	B	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.12	5.61	7.33	0.71	3.13	1.20	1.44	2.30	2.24
50th-Percentile Queue Length [ft/ln]	27.93	140.30	183.28	17.63	78.31	30.08	36.09	57.61	55.92
95th-Percentile Queue Length [veh/ln]	2.01	9.50	12.48	1.27	5.64	2.17	2.60	4.15	4.03
95th-Percentile Queue Length [ft/ln]	50.27	237.43	311.95	31.73	140.96	54.14	64.96	103.69	100.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.77	52.77	44.60	44.60	141.7	141.7	141.7	141.7	19.55	19.55	16.29	15.09	22.65	22.65	15.79	15.86
Movement LOS	D	D	D	D	F	F	F	F	B	B	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	45.90				141.70				16.35				17.17			
Approach LOS	D				F				B				B			
d_I, Intersection Delay [s/veh]	36.28															
Intersection LOS	D															
Intersection V/C	0.364															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 28.6
 Level Of Service: C
 Volume to Capacity (v/c): 0.327

Intersection Setup

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	0	30	170	60	0	30	100	60	0	80	80	30	0	30	60	120
Base Volume Input [veh/h]	0	30	170	60	0	30	100	60	0	80	80	30	0	30	60	120
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	30	170	60	0	30	100	60	0	80	80	30	0	30	60	120
Peak Hour Factor	1.000	0.828	0.828	0.828	1.000	0.834	0.834	0.834	1.000	0.885	0.885	0.885	1.000	0.872	0.872	0.872
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	51	18	0	9	30	18	0	23	23	8	0	9	17	34
Total Analysis Volume [veh/h]	0	36	205	72	0	36	120	72	0	90	90	34	0	34	69	137
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	257				0				18				7			
Bicycle Volume [bicycles/h]	11				5				23				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	0	0	0	4	4	0	2	2	2	0	0	6	0
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	-	-	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0
Maximum Green [s]	0	30	30	0	0	0	30	30	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	3.6	0.0
All red [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	35	35	0	0	0	35	35	0	38	38	38	0	0	38	0
Vehicle Extension [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0
Pedestrian Clearance [s]	0	13	13	0	0	0	13	13	0	16	16	16	0	0	16	0
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	2.6	2.6	2.6	0.0	0.0	2.6	0.0
Minimum Recall			Yes				Yes			No					No	
Maximum Recall			No				No			No					No	
Pedestrian Recall			No				No			No					No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	18	18	18	18	18	52	52
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.18	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.03	0.11	0.05	0.03	0.11	0.16	0.22
s, saturation flow rate [veh/h]	1210	1900	1546	1196	1759	1346	1100
c, Capacity [veh/h]	133	338	275	134	313	751	613
d1, Uniform Delay [s]	46.47	37.88	35.44	46.36	37.93	13.88	14.74
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	0.66	0.19	0.40	0.73	0.95	1.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.61	0.26	0.27	0.61	0.29	0.39
d, Delay for Lane Group [s/veh]	46.87	38.53	35.63	46.75	38.66	14.83	16.61
Lane Group LOS	D	D	D	D	D	B	B
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.88	4.59	1.50	0.88	4.31	2.90	3.53
50th-Percentile Queue Length [ft/ln]	21.94	114.75	37.56	21.91	107.76	72.40	88.31
95th-Percentile Queue Length [veh/ln]	1.58	8.10	2.70	1.58	7.72	5.21	6.36
95th-Percentile Queue Length [ft/ln]	39.49	202.59	67.61	39.43	192.89	130.32	158.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.87	46.87	38.53	35.63	46.75	46.75	38.66	38.66	14.83	14.83	14.83	14.83	16.61	16.61	16.61	16.61
Movement LOS	D	D	D	D	D	D	D	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	38.82				39.94				14.83				16.61			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	28.56															
Intersection LOS	C															
Intersection V/C	0.327															

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.336

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	50	210	90	40	90	30	70	130	40	30	110	140
Base Volume Input [veh/h]	50	210	90	40	90	30	70	130	40	30	110	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	210	90	40	90	30	70	130	40	30	110	140
Peak Hour Factor	0.8868	0.8868	0.8868	0.7663	0.7663	0.7663	0.9649	0.9649	0.9649	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	59	25	13	29	10	18	34	10	8	30	38
Total Analysis Volume [veh/h]	56	237	101	52	117	39	73	135	41	33	121	154
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	425			0			24			8		
Bicycle Volume [bicycles/h]	3			6			42			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	83.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.04	0.12	0.11	0.04	0.09	0.21	0.03	0.14	0.10
s, saturation flow rate [veh/h]	1250	1900	900	1161	1803	983	1566	1100	1584
c, Capacity [veh/h]	195	365	173	142	347	544	789	598	799
d1, Uniform Delay [s]	42.49	37.22	36.69	46.19	35.66	20.86	12.61	15.33	13.60
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.73	1.16	0.59	0.34	2.03	0.12	1.04	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

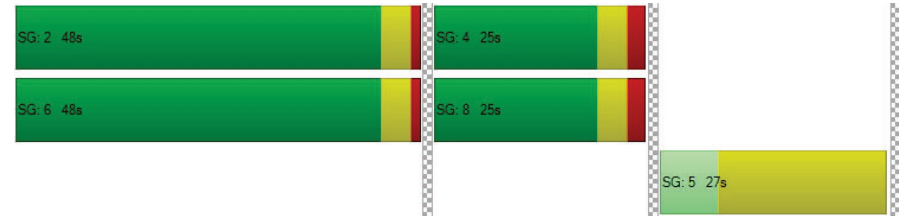
X, volume / capacity	0.29	0.65	0.58	0.37	0.45	0.38	0.05	0.26	0.19
d, Delay for Lane Group [s/veh]	42.79	37.94	37.85	46.78	36.00	22.89	12.73	16.37	14.14
Lane Group LOS	D	D	D	D	D	C	B	B	B
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.30	5.30	2.25	1.27	3.33	4.23	0.49	2.00	1.98
50th-Percentile Queue Length [ft/ln]	32.49	132.41	56.25	31.82	83.16	105.63	12.14	49.91	49.39
95th-Percentile Queue Length [veh/ln]	2.34	9.07	4.05	2.29	5.99	7.60	0.87	3.59	3.56
95th-Percentile Queue Length [ft/ln]	58.48	226.76	101.26	57.28	149.70	189.90	21.85	89.84	88.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.79	37.94	37.85	46.78	36.00	36.00	22.89	22.89	12.73	16.37	16.37	14.14
Movement LOS	D	D	D	D	D	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	38.61			38.69			21.21			15.25		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	28.68											
Intersection LOS	C											
Intersection V/C	0.336											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 26.5
Level Of Service: C
Volume to Capacity (v/c): 0.283

Intersection Setup

Name	2nd St				2nd St				Broadway				Br			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Broadway				Br			
	Base Volume Input [veh/h]	0	30	260	80	0	40	100	10	0	80	110	50	0	60	110
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	30	260	80	0	40	100	10	0	80	110	50	0	60	110	150
Peak Hour Factor	1.000	0.863	0.863	0.863	1.000	0.856	0.856	0.856	1.000	0.889	0.889	0.889	1.000	0.776	0.776	0.776
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	75	23	0	12	29	3	0	22	31	14	0	19	35	48
Total Analysis Volume [veh/h]	0	35	301	93	0	47	117	12	0	90	124	56	0	77	142	193
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	466				0				17				14			
Bicycle Volume [bicycles/h]	14				37				53				22			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	80.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	2	8	2	0	6	4	6	0	4	2	4	0	8	6	8	
Auxiliary Signal Groups	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7	
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30	
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	
All red [s]	0.0	1.0	2.0	1.0	0.0	1.0	2.0	1.0	0.0	2.0	1.0	2.0	0.0	2.0	1.0	2.0	
Split [s]	0	41	30	41	0	41	30	41	0	41	30	41	0	41	30	41	
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7	
Pedestrian Clearance [s]	0	10	12	10	0	10	10	10	0	10	10	10	0	12	10	12	
Rest in Walk																	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	
I2, Clearance Lost Time [s]	0.0	2.6	3.6	2.6	0.0	2.6	3.6	2.6	0.0	3.6	2.6	3.6	0.0	3.6	2.6	3.6	
Minimum Recall			No			No				Yes				Yes			
Maximum Recall			No			No				No				No			
Pedestrian Recall			No			No				No				No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	23	45	45	45	45	45
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.45	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.03	0.16	0.06	0.04	0.07	0.07	0.10	0.06	0.07	0.12
s, saturation flow rate [veh/h]	1281	1900	1546	1095	1859	1266	1777	1223	1900	1553
c, Capacity [veh/h]	262	433	352	138	423	562	800	524	855	699
d1, Uniform Delay [s]	37.28	35.43	31.73	46.13	32.04	20.22	16.82	21.20	16.34	17.26
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.76	0.15	0.54	0.15	0.61	0.65	0.59	0.42	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

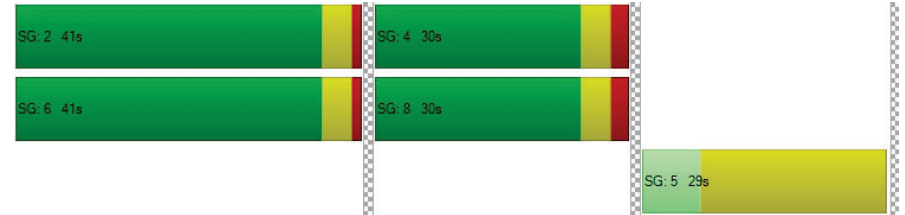
X, volume / capacity	0.13	0.70	0.26	0.34	0.30	0.16	0.23	0.15	0.17	0.28
d, Delay for Lane Group [s/veh]	37.36	36.19	31.87	46.67	32.19	20.83	17.47	21.79	16.75	18.24
Lane Group LOS	D	D	C	D	C	C	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.75	6.65	1.83	1.15	2.56	1.44	2.58	1.27	1.97	2.87
50th-Percentile Queue Length [ft/ln]	18.63	166.22	45.72	28.74	63.98	36.09	64.55	31.74	49.17	71.78
95th-Percentile Queue Length [veh/ln]	1.34	10.88	3.29	2.07	4.61	2.60	4.65	2.29	3.54	5.17
95th-Percentile Queue Length [ft/ln]	33.53	271.94	82.29	51.73	115.16	64.96	116.18	57.13	88.50	129.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.36	37.36	36.19	31.87	46.67	46.67	32.19	32.19	20.83	20.83	17.47	17.47	21.79	21.79	16.75	18.24
Movement LOS	D	D	D	C	D	D	C	C	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	35.35			36.06			18.59			18.39						
Approach LOS	D			D			B			B						
d_I, Intersection Delay [s/veh]	26.50															
Intersection LOS	C															
Intersection V/C	0.283															

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 35.3
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.294

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	20	290	0	29	120	50	66	90	0	20	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	290	0	29	120	50	66	90	0	20	170	150
Peak Hour Factor	0.8824	0.8824	1.0000	0.9439	0.9737	0.9737	0.8321	0.8321	1.0000	0.9017	0.9017	0.9017
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	82	0	8	31	13	20	27	0	6	47	42
Total Analysis Volume [veh/h]	23	329	0	31	123	51	79	108	0	22	189	166
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	295			0			8			32		
Bicycle Volume [bicycles/h]	6			27			58			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	68	68
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.02	0.18	0.07	0.03	0.11	0.12
s, saturation flow rate [veh/h]	1263	1863	1863	1545	1890	1449
c, Capacity [veh/h]	210	357	357	296	1066	817
d1, Uniform Delay [s]	47.44	47.56	41.93	40.50	12.78	12.90
k, delay calibration	0.04	0.09	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	8.82	0.21	0.10	0.41	0.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.92	0.34	0.17	0.19	0.21
d, Delay for Lane Group [s/veh]	47.53	56.38	42.14	40.60	13.19	13.48
Lane Group LOS	D	E	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.63	10.48	3.16	1.26	2.87	2.42
50th-Percentile Queue Length [ft/ln]	15.63	261.96	78.92	31.60	71.76	60.51
95th-Percentile Queue Length [veh/ln]	1.13	15.79	5.68	2.28	5.17	4.36
95th-Percentile Queue Length [ft/ln]	28.13	394.68	142.05	56.88	129.17	108.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.53	56.38	0.00	0.00	42.14	40.60	0.00	0.00	0.00	13.19	13.19	13.48
Movement LOS	D	E			D	D				B	B	B
d_A, Approach Delay [s/veh]	55.81		41.69		0.00		13.32					
Approach LOS	E		D		A		B					
d_I, Intersection Delay [s/veh]	35.35											
Intersection LOS	D											
Intersection V/C	0.294											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 25.3
Level Of Service: C
Volume to Capacity (v/c): 0.544

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	80	540	130	60	90	30	130	240	40	200	390	140
Base Volume Input [veh/h]	80	540	130	60	90	30	130	240	40	200	390	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	540	130	60	90	30	130	240	40	200	390	140
Peak Hour Factor	0.9461	0.9461	0.9461	0.8385	0.8385	0.8385	0.9433	0.9433	0.9433	0.9598	0.9598	0.9598
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	143	34	18	27	9	34	64	11	52	102	36
Total Analysis Volume [veh/h]	85	571	137	72	107	36	138	254	42	208	406	146
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	42	42	42	51	51	51	30	16	16	30	19	19
g / C, Green / Cycle	0.46	0.46	0.46	0.56	0.56	0.56	0.34	0.18	0.18	0.34	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.07	0.30	0.09	0.07	0.06	0.02	0.13	0.08	0.09	0.15	0.15	0.16
s, saturation flow rate [veh/h]	1291	1900	1549	984	1900	1570	1074	1900	1675	1388	1900	1599
c, Capacity [veh/h]	609	878	716	466	1065	880	429	339	299	507	402	338
d1, Uniform Delay [s]	16.79	18.62	14.29	11.90	9.23	8.91	22.71	33.02	33.30	22.65	33.03	33.55
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.29	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	3.72	0.59	0.70	0.19	0.09	0.16	0.34	0.46	1.41	0.91	1.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

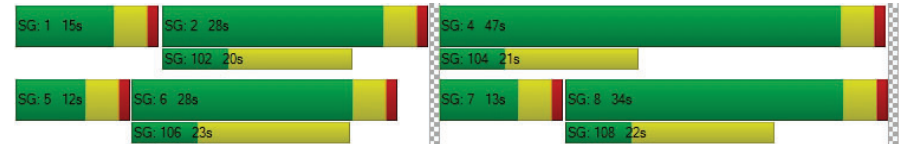
X, volume / capacity	0.14	0.65	0.19	0.15	0.10	0.04	0.32	0.44	0.49	0.41	0.72	0.78
d, Delay for Lane Group [s/veh]	17.27	22.34	14.89	12.60	9.42	9.00	22.87	33.36	33.75	24.05	33.94	35.05
Lane Group LOS	B	C	B	B	A	A	C	C	C	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.14	9.33	1.67	0.68	0.95	0.31	2.03	2.89	2.82	3.36	5.75	5.39
50th-Percentile Queue Length [ft/ln]	28.49	233.33	41.73	17.04	23.72	7.79	50.80	72.15	70.44	84.11	143.76	134.77
95th-Percentile Queue Length [veh/ln]	2.05	14.34	3.00	1.23	1.71	0.56	3.66	5.19	5.07	6.06	9.68	9.20
95th-Percentile Queue Length [ft/ln]	51.27	358.58	75.12	30.67	42.69	14.02	91.43	129.87	126.78	151.40	242.08	229.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.27	22.34	14.89	12.60	9.42	9.00	22.87	33.52	33.75	24.05	34.26	35.05
Movement LOS	B	C	B	B	A	A	C	C	C	C	C	D
d_A, Approach Delay [s/veh]	20.51		10.42			30.16			31.62			
Approach LOS	C		B			C			C			
d_I, Intersection Delay [s/veh]	25.26											
Intersection LOS	C											
Intersection V/C	0.544											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.287

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	50	130	60	60	210	30	40	360	60	120	420	150
Base Volume Input [veh/h]	50	130	60	60	210	30	40	360	60	120	420	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	130	60	60	210	30	40	360	60	120	420	150
Peak Hour Factor	0.7703	0.7703	0.7703	0.9300	0.9300	0.9300	0.9229	0.9229	0.9229	0.9545	0.9545	0.9545
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	42	19	16	56	8	11	98	16	31	110	39
Total Analysis Volume [veh/h]	65	169	78	65	226	32	43	390	65	126	440	157
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	363			0			4			8		
Bicycle Volume [bicycles/h]	9			5			7			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.05	0.05	0.12	0.02	0.05	0.11	0.04	0.11	0.16	0.17
s, saturation flow rate [veh/h]	1173	1900	1579	1236	1900	1586	834	3618	1588	1182	1900	1704
c, Capacity [veh/h]	148	368	306	190	368	308	234	1190	522	548	844	757
d1, Uniform Delay [s]	46.41	35.75	34.26	43.30	36.97	33.24	34.28	25.30	23.54	17.04	18.51	18.59
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.76	0.33	0.16	0.40	0.62	0.05	1.72	0.74	0.49	0.08	1.24	1.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

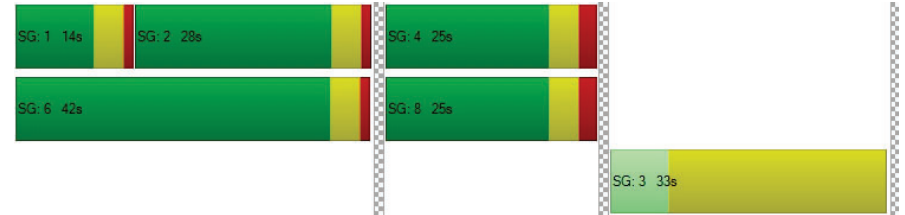
X, volume / capacity	0.44	0.46	0.25	0.34	0.61	0.10	0.18	0.33	0.12	0.23	0.37	0.38
d, Delay for Lane Group [s/veh]	47.17	36.08	34.42	43.70	37.59	33.29	36.00	26.04	24.03	17.12	19.75	20.02
Lane Group LOS	D	D	C	D	D	C	D	C	C	B	B	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.61	3.62	1.60	1.53	5.02	0.64	1.00	3.57	1.14	1.71	4.97	4.61
50th-Percentile Queue Length [ft/ln]	40.19	90.39	39.95	38.35	125.40	15.88	24.91	89.18	28.48	42.87	124.37	115.37
95th-Percentile Queue Length [veh/ln]	2.89	6.51	2.88	2.76	8.69	1.14	1.79	6.42	2.05	3.09	8.63	8.14
95th-Percentile Queue Length [ft/ln]	72.33	162.70	71.91	69.03	217.23	28.58	44.83	160.52	51.27	77.17	215.81	203.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.17	36.08	34.42	43.70	37.59	33.29	36.00	26.04	24.03	17.12	19.83	20.02
Movement LOS	D	D	C	D	D	C	D	C	C	B	B	C
d_A, Approach Delay [s/veh]	37.98			38.39			26.64			19.40		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	27.77											
Intersection LOS	C											
Intersection V/C	0.287											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 26.4
Level Of Service: C
Volume to Capacity (v/c): 0.311

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	50	220	50	20	280	40	10	90	50	40	150	60
Base Volume Input [veh/h]	50	220	50	20	280	40	10	90	50	40	150	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	220	50	20	280	40	10	90	50	40	150	60
Peak Hour Factor	0.8912	0.8912	0.8912	0.9148	0.9148	0.9148	0.8274	0.8274	0.8274	0.8393	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	62	14	5	77	11	3	27	15	12	45	18
Total Analysis Volume [veh/h]	56	247	56	22	306	44	12	109	60	48	179	71
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	276			0			17			7		
Bicycle Volume [bicycles/h]	20			10			12			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	34.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	40	40	40	40	0	0	30	0	30	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	48	48	48	48	48	48	20	20
g / C, Green / Cycle	0.48	0.48	0.48	0.48	0.48	0.48	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.04	0.02	0.09	0.10	0.11	0.18
s, saturation flow rate [veh/h]	1047	1900	1558	1151	1900	1803	1720	1647
c, Capacity [veh/h]	493	911	747	509	911	865	378	367
d1, Uniform Delay [s]	18.87	15.56	14.04	19.63	14.93	14.97	35.83	39.19
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.73	0.20	0.16	0.48	0.52	0.35	6.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

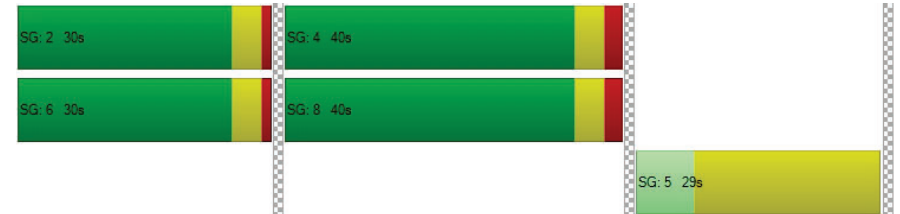
X, volume / capacity	0.11	0.27	0.07	0.04	0.19	0.20	0.48	0.81
d, Delay for Lane Group [s/veh]	19.34	16.29	14.23	19.79	15.40	15.48	36.18	45.99
Lane Group LOS	B	B	B	B	B	B	D	D
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.86	3.41	0.70	0.34	2.34	2.29	3.94	7.67
50th-Percentile Queue Length [ft/ln]	21.57	85.22	17.50	8.49	58.56	57.29	98.56	191.75
95th-Percentile Queue Length [veh/ln]	1.55	6.14	1.26	0.61	4.22	4.12	7.10	12.21
95th-Percentile Queue Length [ft/ln]	38.83	153.40	31.50	15.29	105.40	103.11	177.40	305.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.34	16.29	14.23	19.79	15.44	15.48	36.18	36.18	36.18	45.99	45.99	45.99
Movement LOS	B	B	B	B	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	16.44			15.70			36.18			45.99		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	26.44											
Intersection LOS	C											
Intersection V/C	0.311											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	23.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.294

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	50	300	80	40	330	10	0	180	70	0	210
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	300	80	40	330	10	0	180	70	0	210	50
Peak Hour Factor	0.8402	0.8402	0.8402	0.9000	0.9000	0.9000	1.0000	0.8977	0.8977	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	89	24	11	92	3	0	50	19	0	55	13
Total Analysis Volume [veh/h]	60	357	95	44	367	11	0	201	78	0	222	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	398			0			16			7		
Bicycle Volume [bicycles/h]	13			9			11			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	57	57	57	57	57	57	13	13	13	13
g / C, Green / Cycle	0.57	0.57	0.57	0.57	0.57	0.57	0.13	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.06	0.04	0.10	0.10	0.11	0.05	0.07	0.08
s, saturation flow rate [veh/h]	1021	1900	1587	1041	1900	1879	1900	1564	1900	1759
c, Capacity [veh/h]	579	1085	907	534	1085	1073	240	197	240	222
d1, Uniform Delay [s]	13.47	11.32	9.78	16.16	10.21	10.22	42.68	40.17	41.14	41.40
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	0.81	0.23	0.30	0.35	0.36	2.99	0.48	0.81	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

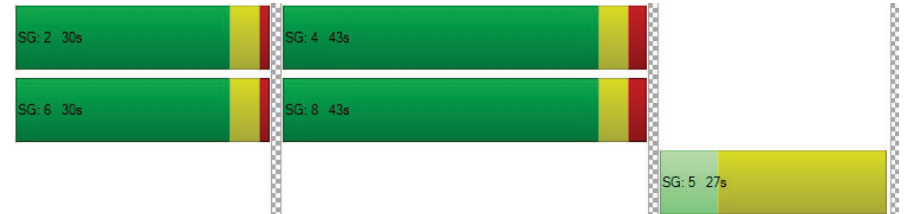
X, volume / capacity	0.10	0.33	0.10	0.08	0.17	0.18	0.84	0.40	0.57	0.62
d, Delay for Lane Group [s/veh]	13.83	12.13	10.01	16.46	10.56	10.57	45.68	40.65	41.95	42.45
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.75	4.11	0.95	0.61	1.96	1.94	5.01	1.78	3.22	3.26
50th-Percentile Queue Length [ft/ln]	18.75	102.64	23.65	15.28	48.91	48.62	125.20	44.56	80.62	81.40
95th-Percentile Queue Length [veh/ln]	1.35	7.39	1.70	1.10	3.52	3.50	8.68	3.21	5.80	5.86
95th-Percentile Queue Length [ft/ln]	33.76	184.76	42.57	27.50	88.04	87.52	216.96	80.21	145.11	146.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.83	12.13	10.01	16.46	10.57	10.57	0.00	45.68	40.65	0.00	42.14	42.45
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	11.94			11.18			44.27			42.20		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.38											
Intersection LOS	C											
Intersection V/C	0.294											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 34.8
Level Of Service: C
Volume to Capacity (v/c): 0.394

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	130	410	170	20	290	50	0	160	50	110	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	410	170	20	290	50	0	160	50	110	220	50
Peak Hour Factor	0.9144	0.9144	0.9144	0.9709	0.9709	0.9709	1.0000	0.9118	0.9118	0.8866	0.8866	0.8866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	112	46	5	75	13	0	44	14	31	62	14
Total Analysis Volume [veh/h]	142	448	186	21	299	51	0	175	55	124	248	56
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	516			0			19			11		
Bicycle Volume [bicycles/h]	29			44			5			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	11	55	55	63	47	47	13	29	25	25	25
g / C, Green / Cycle	0.09	0.45	0.45	0.52	0.39	0.39	0.11	0.24	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.24	0.12	0.02	0.09	0.10	0.09	0.03	0.08	0.13	0.04
s, saturation flow rate [veh/h]	1810	1900	1573	1041	1900	1783	1900	1588	1461	1900	1590
c, Capacity [veh/h]	170	863	714	467	741	695	207	383	287	398	333
d1, Uniform Delay [s]	53.47	23.40	20.28	15.73	24.64	24.73	52.49	35.79	40.83	43.18	38.91
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.05	2.23	0.88	0.18	0.76	0.85	3.61	0.06	1.07	0.60	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.52	0.26	0.04	0.24	0.25	0.84	0.14	0.43	0.62	0.17
d, Delay for Lane Group [s/veh]	57.52	25.62	21.16	15.91	25.41	25.58	56.10	35.85	41.90	43.78	39.00
Lane Group LOS	E	C	C	B	C	C	E	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.37	9.37	3.35	0.30	3.53	3.45	5.38	1.28	3.18	6.70	1.36
50th-Percentile Queue Length [ft/ln]	109.16	234.17	83.85	7.39	88.37	86.18	134.49	32.09	79.57	167.57	33.97
95th-Percentile Queue Length [veh/ln]	7.79	14.39	6.04	0.53	6.36	6.20	9.18	2.31	5.73	10.95	2.45
95th-Percentile Queue Length [ft/ln]	194.83	359.65	150.92	13.30	159.07	155.12	229.58	57.77	143.23	273.72	61.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.52	25.62	21.16	15.91	25.48	25.58	0.00	56.10	35.85	41.90	43.78	39.00
Movement LOS	E	C	C	B	C	C		E	D	D	D	D
d_A, Approach Delay [s/veh]	30.39			24.95			51.26			42.61		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.83											
Intersection LOS	C											
Intersection V/C	0.394											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.303

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	270	720	0	0	400	30	181	0	84	100	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	270	720	0	0	400	30	181	0	84	100	80	40
Peak Hour Factor	0.8612	0.8612	1.0000	1.0000	0.9000	0.9000	0.8717	1.0000	0.8717	0.9130	0.9130	0.9130
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	78	209	0	0	111	8	52	0	24	27	22	11
Total Analysis Volume [veh/h]	314	836	0	0	444	33	208	0	96	110	88	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	722			0			156			3		
Bicycle Volume [bicycles/h]	7			56			7			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	22	71	0	0	49	20	29	0	22	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	80	80	65	65	11	11
g / C, Green / Cycle	0.67	0.67	0.54	0.54	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.29	0.23	0.13	0.13	0.07	0.07
s, saturation flow rate [veh/h]	1079	3618	1900	1844	1821	1604
c, Capacity [veh/h]	742	2415	1024	994	162	143
d1, Uniform Delay [s]	8.52	8.63	14.58	14.65	53.54	53.63
k, delay calibration	0.22	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.39	0.53	0.57	3.14	3.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

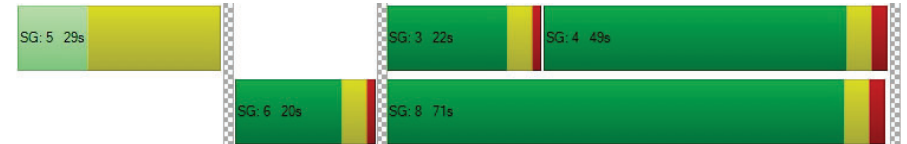
X, volume / capacity	0.42	0.35	0.23	0.24	0.78	0.80
d, Delay for Lane Group [s/veh]	9.31	9.02	15.11	15.22	56.68	57.56
Lane Group LOS	A	A	B	B	E	E
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.28	4.59	3.49	3.51	3.94	3.58
50th-Percentile Queue Length [ft/ln]	81.91	114.67	87.19	87.70	98.40	89.47
95th-Percentile Queue Length [veh/ln]	5.90	8.10	6.28	6.31	7.08	6.44
95th-Percentile Queue Length [ft/ln]	147.44	202.47	156.94	157.86	177.11	161.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.31	9.02	0.00	0.00	15.16	15.22	0.00	0.00	0.00	56.68	57.39	57.56
Movement LOS	A	A			B	B				E	E	E
d_A, Approach Delay [s/veh]	9.10		15.17			0.00		57.10				
Approach LOS	A		B			A		E				
d_I, Intersection Delay [s/veh]	16.86											
Intersection LOS	B											
Intersection V/C	0.303											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 38.6
Level Of Service: D
Volume to Capacity (v/c): 0.704

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		850	540
	Northbound		Southbound			
Base Volume Input [veh/h]	430	0	0	580	850	540
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	430	0	0	580	850	540
Peak Hour Factor	0.9052	1.0000	1.0000	0.8323	0.9608	0.9608
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	0	0	174	221	141
Total Analysis Volume [veh/h]	475	0	0	697	885	562
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	42.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	45	0	0	45	45	45
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	40
g / C, Green / Cycle	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.35	0.51
s, saturation flow rate [veh/h]	3618	3618	2500	1100
c, Capacity [veh/h]	1628	1628	1119	492
d1, Uniform Delay [s]	15.65	16.84	21.22	24.82
k, delay calibration	0.50	0.50	0.04	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.83	0.48	85.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

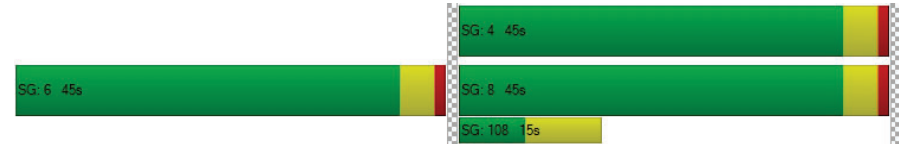
X, volume / capacity	0.29	0.43	0.79	1.14
d, Delay for Lane Group [s/veh]	16.11	17.67	21.70	110.30
Lane Group LOS	B	B	C	F
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.08	4.88	6.76	20.40
50th-Percentile Queue Length [ft/ln]	76.88	121.98	169.06	509.96
95th-Percentile Queue Length [veh/ln]	5.54	8.50	11.03	30.41
95th-Percentile Queue Length [ft/ln]	138.38	212.55	275.68	760.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.11	0.00	0.00	17.67	21.70	110.30
Movement LOS	B			B	C	F
d_A, Approach Delay [s/veh]	16.11		17.67		56.11	
Approach LOS	B		B		E	
d_I, Intersection Delay [s/veh]			38.63			
Intersection LOS			D			
Intersection V/C			0.704			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 41.1
Level Of Service: D
Volume to Capacity (v/c): 0.574

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	TTT			TTT			TTT					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	30	390	440	280	830	210	50	540	70	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	390	440	280	830	210	50	540	70	0	0	0
Peak Hour Factor	0.8933	0.8933	0.8933	0.9143	0.9143	0.9143	0.7752	0.7752	0.7752	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	109	123	77	227	57	16	174	23	0	0	0
Total Analysis Volume [veh/h]	34	437	493	306	908	230	64	697	90	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			109			47		
Bicycle Volume [bicycles/h]	0			2			13			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	12	36	36	25	49	49	29	29	29	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No		No	Yes			No				
Maximum Recall	No	Yes		No	No			No				
Pedestrian Recall	No	No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	25	25	34	56	56	17	17	17
g / C, Green / Cycle	0.03	0.28	0.28	0.38	0.62	0.62	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.32	0.09	0.31	0.33	0.16	0.16	0.17
s, saturation flow rate [veh/h]	1810	1900	1533	3514	1900	1679	1880	1729	1615
c, Capacity [veh/h]	59	528	426	1331	1185	1047	357	329	307
d1, Uniform Delay [s]	42.90	30.48	32.50	19.02	9.20	9.50	35.22	35.21	35.35
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.22	13.91	94.27	0.03	1.47	1.91	2.26	2.42	2.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.83	1.16	0.23	0.49	0.53	0.85	0.85	0.87
d, Delay for Lane Group [s/veh]	46.12	44.39	126.76	19.06	10.67	11.41	37.48	37.63	38.31
Lane Group LOS	D	D	F	B	B	B	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.79	10.65	20.10	2.12	5.98	5.93	6.46	5.94	5.72
50th-Percentile Queue Length [ft/ln]	19.78	286.22	502.45	53.12	149.39	148.16	161.42	148.50	143.11
95th-Percentile Queue Length [veh/ln]	1.42	16.00	29.86	3.82	9.98	9.92	10.62	9.94	9.65
95th-Percentile Queue Length [ft/ln]	35.61	400.01	746.40	95.62	249.62	247.98	265.61	248.43	241.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.12	44.39	126.76	19.06	10.93	11.41	37.48	37.75	38.31	0.00	0.00	0.00
Movement LOS	D	D	F	B	B	B	D	D	D			
d_A, Approach Delay [s/veh]	86.58			12.73			37.79			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	41.12											
Intersection LOS	D											
Intersection V/C	0.574											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	16.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.289

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Base Volume Input [veh/h]	140	110	120	60	80	10	20	440	20	70	560
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	110	120	60	80	10	20	440	20	70	560	40
Peak Hour Factor	0.9659	0.9659	0.9659	0.8023	0.8023	0.8023	0.9311	0.9311	0.9311	0.9371	0.9371	0.9371
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	28	31	19	25	3	5	118	5	19	149	11
Total Analysis Volume [veh/h]	145	114	124	75	100	12	21	473	21	75	598	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			88			39			23		
Bicycle Volume [bicycles/h]	7			9			2			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	22	64	64	64	64	64	64
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.12	0.06	0.08	0.06	0.06	0.03	0.13	0.01	0.08	0.17	0.17
s, saturation flow rate [veh/h]	1253	1900	1536	1270	1847	791	3618	1538	925	1900	1827
c, Capacity [veh/h]	263	427	345	266	415	507	2327	989	600	1222	1175
d1, Uniform Delay [s]	40.63	31.95	32.67	38.13	31.97	10.40	7.32	6.45	10.02	7.67	7.70
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	0.12	0.23	0.21	0.13	0.15	0.20	0.04	0.43	0.53	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

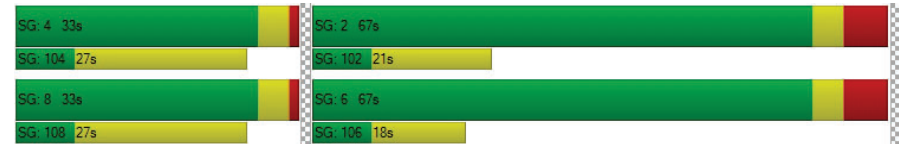
X, volume / capacity	0.55	0.27	0.36	0.28	0.27	0.04	0.20	0.02	0.13	0.27	0.27
d, Delay for Lane Group [s/veh]	41.31	32.08	32.91	38.35	32.10	10.56	7.52	6.49	10.45	8.20	8.26
Lane Group LOS	D	C	C	D	C	B	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.40	2.25	2.51	1.64	2.21	0.23	1.97	0.16	0.81	2.92	2.88
50th-Percentile Queue Length [ft/ln]	85.03	56.22	62.69	41.09	55.28	5.72	49.33	4.01	20.21	73.04	71.89
95th-Percentile Queue Length [veh/ln]	6.12	4.05	4.51	2.96	3.98	0.41	3.55	0.29	1.46	5.26	5.18
95th-Percentile Queue Length [ft/ln]	153.05	101.20	112.84	73.97	99.51	10.30	88.79	7.21	36.38	131.48	129.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.31	32.08	32.91	38.35	32.10	32.10	10.56	7.52	6.49	10.45	8.23	8.26
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	35.84			34.61			7.60			8.46		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	16.75											
Intersection LOS	B											
Intersection V/C	0.289											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 19.8
Level Of Service: B
Volume to Capacity (v/c): 0.288

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	90	290	50	20	120	30	10	140	20	30	160	70
Base Volume Input [veh/h]	90	290	50	20	120	30	10	140	20	30	160	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	290	50	20	120	30	10	140	20	30	160	70
Peak Hour Factor	0.8947	0.8947	0.8947	0.8571	0.8571	0.8571	0.8100	0.8100	0.8100	0.8464	0.8464	0.8464
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	81	14	6	35	9	3	43	6	9	47	21
Total Analysis Volume [veh/h]	101	324	56	23	140	35	12	173	25	35	189	83
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	30			86			30			19		
Bicycle Volume [bicycles/h]	27			10			3			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	69	22	22
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.69	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.11	0.02	0.10	0.12	0.18
s, saturation flow rate [veh/h]	1216	1900	1774	1014	1815	1796	1679
c, Capacity [veh/h]	832	1305	1219	702	1247	435	411
d1, Uniform Delay [s]	7.66	5.44	5.46	7.31	5.41	34.18	36.89
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.24	0.27	0.09	0.24	0.83	2.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

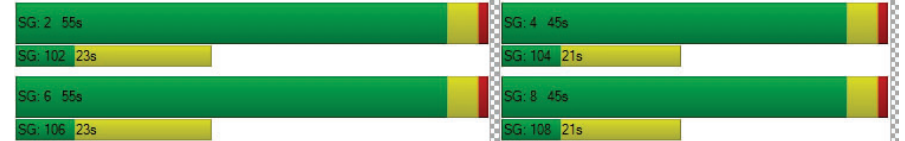
X, volume / capacity	0.12	0.15	0.15	0.03	0.14	0.48	0.75
d, Delay for Lane Group [s/veh]	7.95	5.68	5.72	7.40	5.64	35.01	39.63
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.87	1.29	1.25	0.19	1.16	4.49	7.24
50th-Percentile Queue Length [ft/ln]	21.82	32.22	31.25	4.77	29.02	112.14	181.08
95th-Percentile Queue Length [veh/ln]	1.57	2.32	2.25	0.34	2.09	7.96	11.66
95th-Percentile Queue Length [ft/ln]	39.27	57.99	56.26	8.59	52.23	198.98	291.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.95	5.70	5.72	7.40	5.64	5.64	35.01	35.01	35.01	39.63	39.63	39.63
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	6.17			5.84			35.01			39.63		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	19.77											
Intersection LOS	B											
Intersection V/C	0.288											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 24.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.287

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	80	480	110	30	90	20	30	250	20	40	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	480	110	30	90	20	30	250	20	40	200	60
Peak Hour Factor	0.9555	0.9555	0.9555	0.8468	0.8468	0.8468	0.9094	0.9094	0.9094	0.9331	0.9331	0.9331
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	126	29	9	27	6	8	69	5	11	54	16
Total Analysis Volume [veh/h]	84	502	115	35	106	24	33	275	22	43	214	64
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	152			133			81			50		
Bicycle Volume [bicycles/h]	10			10			4			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	24	24	24	24	24	63	63	63	63	63	63
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.63	0.63	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.17	0.04	0.07	0.03	0.08	0.08	0.04	0.11	0.04
s, saturation flow rate [veh/h]	1210	1900	1715	816	1789	1153	1900	1822	1064	1900	1491
c, Capacity [veh/h]	269	458	413	123	431	715	1191	1143	681	1191	935
d1, Uniform Delay [s]	37.64	34.60	34.90	45.91	31.07	10.06	7.55	7.56	9.52	7.84	7.26
k, delay calibration	0.04	0.05	0.07	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.93	1.63	0.47	0.14	0.12	0.22	0.23	0.18	0.33	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.69	0.72	0.28	0.30	0.05	0.13	0.13	0.06	0.18	0.07
d, Delay for Lane Group [s/veh]	37.88	35.53	36.53	46.37	31.21	10.18	7.76	7.80	9.70	8.17	7.41
Lane Group LOS	D	D	D	D	C	B	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.84	6.98	6.70	0.85	2.54	0.34	1.28	1.27	0.44	1.91	0.54
50th-Percentile Queue Length [ft/ln]	45.92	174.58	167.62	21.37	63.47	8.57	32.09	31.77	10.90	47.73	13.39
95th-Percentile Queue Length [veh/ln]	3.31	11.32	10.95	1.54	4.57	0.62	2.31	2.29	0.78	3.44	0.96
95th-Percentile Queue Length [ft/ln]	82.66	282.93	273.78	38.47	114.24	15.43	57.76	57.19	19.62	85.91	24.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.88	35.89	36.53	46.37	31.21	31.21	10.18	7.78	7.80	9.70	8.17	7.41
Movement LOS	D	D	D	D	C	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	36.24			34.43			8.02			8.22		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	23.97											
Intersection LOS	C											
Intersection V/C	0.287											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.2
Level Of Service: C
Volume to Capacity (v/c): 0.377

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	90	570	100	30	60	50	70	220	50	40	240	40
Base Volume Input [veh/h]	90	570	100	30	60	50	70	220	50	40	240	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	570	100	30	60	50	70	220	50	40	240	40
Peak Hour Factor	0.8505	0.8505	0.8505	0.8750	0.8750	0.8750	0.9438	0.9438	0.9438	0.8844	0.8844	0.8844
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	168	29	9	17	14	19	58	13	11	68	11
Total Analysis Volume [veh/h]	106	670	118	34	69	57	74	233	53	45	271	45
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	89			102			37			54		
Bicycle Volume [bicycles/h]	34			64			3			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	29	29	61	61	61	61	61
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.08	0.21	0.22	0.05	0.08	0.07	0.16	0.04	0.14	0.03
s, saturation flow rate [veh/h]	1262	1900	1744	698	1674	1105	1817	1094	1900	1513
c, Capacity [veh/h]	338	560	514	119	493	664	1115	650	1166	928
d1, Uniform Delay [s]	34.02	31.60	31.89	45.76	26.90	11.55	8.86	11.61	8.71	7.70
k, delay calibration	0.04	0.16	0.18	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	2.56	3.52	0.49	0.10	0.34	0.56	0.21	0.47	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.72	0.75	0.29	0.26	0.11	0.26	0.07	0.23	0.05
d, Delay for Lane Group [s/veh]	34.22	34.16	35.42	46.25	27.00	11.89	9.42	11.82	9.18	7.80
Lane Group LOS	C	C	D	D	C	B	A	B	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.20	8.87	8.62	0.83	2.26	0.84	2.75	0.51	2.56	0.38
50th-Percentile Queue Length [ft/ln]	54.95	221.82	215.46	20.80	56.55	20.93	68.86	12.64	63.90	9.46
95th-Percentile Queue Length [veh/ln]	3.96	13.76	13.43	1.50	4.07	1.51	4.96	0.91	4.60	0.68
95th-Percentile Queue Length [ft/ln]	98.91	343.94	335.83	37.43	101.79	37.68	123.95	22.75	115.02	17.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.22	34.66	35.42	46.25	27.00	27.00	11.89	9.42	9.42	11.82	9.18	7.80
Movement LOS	C	C	D	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.70			31.09			9.93			9.34		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	24.19											
Intersection LOS	C											
Intersection V/C	0.377											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 22.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.324

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	660	30	20	20	70	0	0	0	6	130	30
Base Volume Input [veh/h]	14	660	30	20	20	70	0	0	0	6	130	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	660	30	20	20	70	0	0	0	6	130	30
Peak Hour Factor	0.9399	0.8905	0.8905	0.7826	0.7826	0.7826	1.0000	1.0000	1.0000	0.9301	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	185	8	6	6	22	0	0	0	2	39	9
Total Analysis Volume [veh/h]	15	741	34	26	26	89	0	0	0	6	155	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	178			3			54			110		
Bicycle Volume [bicycles/h]	23			4			4			13		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	41	41	4	49	40
g / C, Green / Cycle	0.41	0.41	0.04	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.20	0.03	0.01	0.07	0.10
s, saturation flow rate [veh/h]	3618	1342	1810	1610	1830
c, Capacity [veh/h]	1485	551	65	793	742
d1, Uniform Delay [s]	21.84	17.82	47.10	13.86	19.73
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.20	0.22	1.45	0.38	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

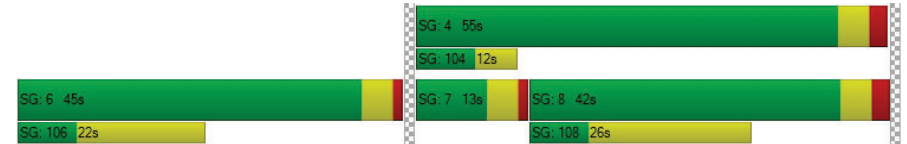
X, volume / capacity	0.50	0.06	0.40	0.15	0.26
d, Delay for Lane Group [s/veh]	23.04	18.04	48.55	14.24	20.57
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.52	0.50	0.65	1.44	3.08
50th-Percentile Queue Length [ft/ln]	163.07	12.57	16.26	36.06	77.07
95th-Percentile Queue Length [veh/ln]	10.71	0.90	1.17	2.60	5.55
95th-Percentile Queue Length [ft/ln]	267.78	22.62	29.27	64.91	138.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	23.04	18.04	48.55	14.24	14.24	0.00	0.00	0.00	0.00	20.57	20.57
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		22.83		20.57		0.00		20.57				
Approach LOS		C		C		A		C				
d_I, Intersection Delay [s/veh]		22.15										
Intersection LOS		C										
Intersection V/C		0.324										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 17.4
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.257

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	10	80	20	20	110	20	40	160	30	30	170	30
Base Volume Input [veh/h]	10	80	20	20	110	20	40	160	30	30	170	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	80	20	20	110	20	40	160	30	30	170	30
Peak Hour Factor	0.8225	0.8225	0.8225	0.8437	0.8437	0.8437	0.8830	0.8830	0.8830	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	24	6	6	33	6	11	45	8	8	47	8
Total Analysis Volume [veh/h]	12	97	24	24	130	24	45	181	34	33	188	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	76	76	76
g / C, Green / Cycle	0.15	0.15	0.76	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.15	0.13	0.02
s, saturation flow rate [veh/h]	1758	1734	1687	1764	1576
c, Capacity [veh/h]	305	303	1319	1377	1192
d1, Uniform Delay [s]	38.85	39.92	3.44	3.34	3.02
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.68	0.33	0.25	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.59	0.20	0.16	0.03
d, Delay for Lane Group [s/veh]	39.22	40.60	3.78	3.59	3.06
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.97	4.10	1.22	1.01	0.14
50th-Percentile Queue Length [ft/ln]	74.23	102.44	30.59	25.14	3.42
95th-Percentile Queue Length [veh/ln]	5.34	7.38	2.20	1.81	0.25
95th-Percentile Queue Length [ft/ln]	133.62	184.39	55.06	45.25	6.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.22	39.22	39.22	40.60	40.60	40.60	3.78	3.78	3.78	3.59	3.59	3.06
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	39.22			40.60			3.78			3.52		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.36											
Intersection LOS	B											
Intersection V/C	0.257											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.320

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	20	70	30	60	70	30	30	360	30	40	270	60
Base Volume Input [veh/h]	20	70	30	60	70	30	30	360	30	40	270	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	70	30	60	70	30	30	360	30	40	270	60
Peak Hour Factor	0.9629	0.9629	0.9629	0.8875	0.8875	0.8875	0.8500	0.8500	0.8500	0.9263	0.9263	0.9263
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	18	8	17	20	8	9	106	9	11	73	16
Total Analysis Volume [veh/h]	21	73	31	68	79	34	35	424	35	43	291	65
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	18	18	18	18	69	69	69	69	69	69
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.69	0.69	0.69	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.06	0.07	0.04	0.25	0.03	0.05	0.17	0.05
s, saturation flow rate [veh/h]	1114	1585	1140	1569	980	1710	1378	875	1710	1356
c, Capacity [veh/h]	178	286	187	283	664	1175	947	567	1175	932
d1, Uniform Delay [s]	41.73	35.90	42.96	36.15	8.12	6.50	5.01	9.92	5.89	5.13
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	0.29	0.44	0.34	0.15	0.86	0.07	0.26	0.50	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.36	0.36	0.40	0.05	0.36	0.04	0.08	0.25	0.07
d, Delay for Lane Group [s/veh]	41.84	36.19	43.40	36.49	8.28	7.36	5.09	10.18	6.39	5.28
Lane Group LOS	D	D	D	D	A	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.48	2.21	1.60	2.42	0.32	3.56	0.23	0.46	2.20	0.43
50th-Percentile Queue Length [ft/ln]	11.91	55.19	40.06	60.41	8.07	88.98	5.70	11.42	55.08	10.86
95th-Percentile Queue Length [veh/ln]	0.86	3.97	2.88	4.35	0.58	6.41	0.41	0.82	3.97	0.78
95th-Percentile Queue Length [ft/ln]	21.44	99.33	72.10	108.75	14.52	160.16	10.26	20.55	99.14	19.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.84	36.19	36.19	43.40	36.49	36.49	8.28	7.36	5.09	10.18	6.39	5.28
Movement LOS	D	D	D	D	D	D	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	37.14			39.08			7.26			6.62		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.97											
Intersection LOS	B											
Intersection V/C	0.320											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 21.0
Level Of Service: C
Volume to Capacity (v/c): 0.336

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	30	180	30	40	180	30	70	160	40	30	190	40
Base Volume Input [veh/h]	30	180	30	40	180	30	70	160	40	30	190	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	180	30	40	180	30	70	160	40	30	190	40
Peak Hour Factor	0.8965	0.8965	0.8965	0.7875	0.7875	0.7875	0.7827	0.7827	0.7827	0.8125	0.8125	0.8125
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	50	8	13	57	10	22	51	13	9	58	12
Total Analysis Volume [veh/h]	33	201	33	51	229	38	89	204	51	37	234	49
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	21	21	21	21	69	69	69
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.70	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.04	0.15	0.19	0.03	0.18
s, saturation flow rate [veh/h]	1094	1833	1149	1808	1558	1572	1751
c, Capacity [veh/h]	130	391	157	386	1129	1092	1256
d1, Uniform Delay [s]	46.23	35.45	44.82	36.28	5.53	4.82	5.65
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.55	0.44	0.83	0.56	0.08	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.60	0.32	0.69	0.26	0.05	0.25
d, Delay for Lane Group [s/veh]	46.61	36.00	45.26	37.11	6.09	4.90	6.14
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.82	5.21	1.25	6.10	2.03	0.31	2.25
50th-Percentile Queue Length [ft/ln]	20.47	130.26	31.26	152.61	50.78	7.67	56.15
95th-Percentile Queue Length [veh/ln]	1.47	8.95	2.25	10.16	3.66	0.55	4.04
95th-Percentile Queue Length [ft/ln]	36.84	223.85	56.26	253.91	91.40	13.81	101.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.61	36.00	36.00	45.26	37.11	37.11	6.09	6.09	4.90	6.14	6.14	6.14
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.31			38.42			5.91			6.14		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	20.96											
Intersection LOS	C											
Intersection V/C	0.336											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 18.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.353

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	20	240	40	70	110	30	60	350	40	30	330
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	240	40	70	110	30	60	350	40	30	330	100
Peak Hour Factor	0.9300	0.9300	0.9300	0.7908	0.7908	0.7908	0.9059	0.9059	0.9059	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	65	11	22	35	9	17	97	11	8	90	27
Total Analysis Volume [veh/h]	22	258	43	89	139	38	66	386	44	33	361	109
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	60	60	60	60	60	60
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.02	0.16	0.08	0.10	0.06	0.11	0.12	0.03	0.19	0.07
s, saturation flow rate [veh/h]	1211	1842	1089	1810	1030	1900	1814	964	1900	1549
c, Capacity [veh/h]	272	486	182	478	576	1148	1096	583	1148	936
d1, Uniform Delay [s]	35.48	32.40	43.96	30.04	13.91	8.85	8.87	11.42	9.67	8.42
k, delay calibration	0.04	0.07	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.78	0.75	0.18	0.40	0.37	0.39	0.19	0.72	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.62	0.49	0.37	0.11	0.19	0.19	0.06	0.31	0.12
d, Delay for Lane Group [s/veh]	35.53	33.18	44.71	30.22	14.32	9.21	9.26	11.60	10.39	8.68
Lane Group LOS	D	C	D	C	B	A	A	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.46	6.51	2.20	3.52	0.86	2.11	2.06	0.38	3.84	1.02
50th-Percentile Queue Length [ft/ln]	11.59	162.78	55.01	87.90	21.50	52.77	51.62	9.42	95.96	25.39
95th-Percentile Queue Length [veh/ln]	0.83	10.70	3.96	6.33	1.55	3.80	3.72	0.68	6.91	1.83
95th-Percentile Queue Length [ft/ln]	20.87	267.40	99.02	158.22	38.70	94.99	92.91	16.96	172.73	45.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.53	33.18	33.18	44.71	30.22	30.22	14.32	9.23	9.26	11.60	10.39	8.68
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	A
d_A, Approach Delay [s/veh]	33.34			35.07			9.91			10.10		
Approach LOS	C			D			A			B		
d_I, Intersection Delay [s/veh]	18.95											
Intersection LOS	B											
Intersection V/C	0.353											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.451

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	150	360	270	60	390	20	20	540	160	220	550	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	360	270	60	390	20	20	540	160	220	550	40
Peak Hour Factor	0.9050	0.9050	0.9050	0.9194	0.9194	0.9194	0.8737	0.8737	0.8737	0.9366	0.9366	0.9366
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	99	75	16	106	5	6	155	46	59	147	11
Total Analysis Volume [veh/h]	166	398	298	65	424	22	23	618	183	235	587	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	39			27			19			22		
Bicycle Volume [bicycles/h]	6			9			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	43	43	43	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.43	0.43	0.43	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.21	0.19	0.07	0.12	0.12	0.03	0.17	0.12	0.24	0.16	0.03
s, saturation flow rate [veh/h]	1200	1900	1560	994	1900	1857	835	3618	1551	997	3618	1542
c, Capacity [veh/h]	430	670	551	111	442	432	348	1574	675	567	2008	856
d1, Uniform Delay [s]	23.74	26.49	25.89	48.85	33.38	33.42	23.06	19.25	18.10	12.30	11.81	10.18
k, delay calibration	0.30	0.09	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	0.68	0.33	1.84	0.34	0.35	0.37	0.74	0.99	2.22	0.37	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.59	0.54	0.59	0.51	0.51	0.07	0.39	0.27	0.41	0.29	0.05
d, Delay for Lane Group [s/veh]	25.32	27.17	26.21	50.69	33.72	33.77	23.43	19.99	19.09	14.53	12.18	10.29
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.95	7.72	5.60	1.66	4.67	4.62	0.41	4.94	2.85	2.85	3.35	0.44
50th-Percentile Queue Length [ft/ln]	73.64	192.97	140.12	41.50	116.79	115.40	10.19	123.50	71.16	71.30	83.70	10.90
95th-Percentile Queue Length [veh/ln]	5.30	12.28	9.49	2.99	8.22	8.14	0.73	8.59	5.12	5.13	6.03	0.78
95th-Percentile Queue Length [ft/ln]	132.54	306.88	237.19	74.70	205.41	203.49	18.34	214.63	128.08	128.33	150.65	19.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.32	27.17	26.21	50.69	33.74	33.77	23.43	19.99	19.09	14.53	12.18	10.29
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	26.49			35.90			19.89			12.73		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	22.39											
Intersection LOS	C											
Intersection V/C	0.451											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 49.7
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.812

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	130	620	120	20	670	40	30	110	80	70	140	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	620	120	20	670	40	30	110	80	70	140	50
Peak Hour Factor	0.9138	0.9138	0.9138	0.9461	0.9461	0.9461	0.7357	0.7357	0.7357	0.9154	0.9154	0.9154
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	170	33	5	177	11	10	37	27	19	38	14
Total Analysis Volume [veh/h]	142	678	131	21	708	42	41	150	109	76	153	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164			102			111			62		
Bicycle Volume [bicycles/h]	4			3			0			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	56	56	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.56	0.56	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.16	0.22	0.23	0.03	0.20	0.20	0.39	0.08	0.57	0.04
s, saturation flow rate [veh/h]	886	1900	1741	787	1900	1828	493	1325	400	1413
c, Capacity [veh/h]	578	1056	967	514	985	948	179	364	158	388
d1, Uniform Delay [s]	8.29	12.63	12.74	7.75	14.47	14.54	32.07	28.66	40.42	27.36
k, delay calibration	0.42	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	1.10	1.27	0.15	1.14	1.22	85.95	0.17	234.90	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

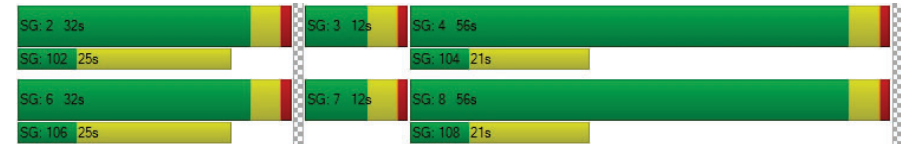
X, volume / capacity	0.25	0.39	0.41	0.04	0.38	0.39	1.07	0.30	1.45	0.14
d, Delay for Lane Group [s/veh]	9.13	13.73	14.01	7.90	15.60	15.76	118.02	28.82	275.32	27.43
Lane Group LOS	A	B	B	A	B	B	F	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.26	5.35	5.13	0.18	5.26	5.20	7.65	2.04	14.18	0.98
50th-Percentile Queue Length [ft/ln]	31.45	133.73	128.21	4.40	131.55	130.09	191.16	51.03	354.60	24.55
95th-Percentile Queue Length [veh/ln]	2.26	9.14	8.84	0.32	9.02	8.94	12.60	3.67	24.08	1.77
95th-Percentile Queue Length [ft/ln]	56.61	228.55	221.06	7.92	225.61	223.61	315.01	91.85	601.98	44.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.13	13.84	14.01	7.90	15.68	15.76	118.02	118.02	28.82	275.32	275.32	27.43
Movement LOS	A	B	B	A	B	B	F	F	C	F	F	C
d_A, Approach Delay [s/veh]	13.16			15.47			85.61			227.31		
Approach LOS	B			B			F			F		
d_I, Intersection Delay [s/veh]	49.73											
Intersection LOS	D											
Intersection V/C	0.812											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.3
Level Of Service: C
Volume to Capacity (v/c): 0.487

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	110	750	190	70	720	30	30	320	120	110	320	120
Base Volume Input [veh/h]	110	750	190	70	720	30	30	320	120	110	320	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	750	190	70	720	30	30	320	120	110	320	120
Peak Hour Factor	0.9396	0.9396	0.9396	0.8850	0.8850	0.8850	0.9209	0.9209	0.9209	0.9532	0.9532	0.9532
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	200	51	20	203	8	8	87	33	29	84	31
Total Analysis Volume [veh/h]	117	798	202	79	814	34	33	347	130	115	336	126
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			54			48			29		
Bicycle Volume [bicycles/h]	10			3			1			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	58	47	47	58	46	46	22	22	22	33	33	33
g / C, Green / Cycle	0.58	0.47	0.47	0.58	0.46	0.46	0.22	0.22	0.22	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.14	0.27	0.28	0.10	0.22	0.23	0.03	0.13	0.14	0.10	0.18	0.08
s, saturation flow rate [veh/h]	846	1900	1740	762	1900	1865	1030	1900	1654	1179	1900	1513
c, Capacity [veh/h]	493	889	814	430	879	863	127	416	362	381	631	502
d1, Uniform Delay [s]	11.07	19.48	19.61	11.81	18.61	18.64	46.26	35.10	35.45	24.76	27.11	24.34
k, delay calibration	0.30	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.09	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	2.78	3.17	0.94	1.92	1.97	0.40	0.51	0.69	0.37	0.26	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

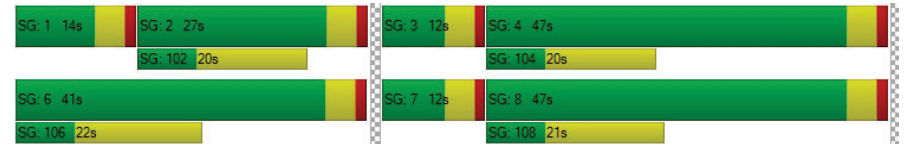
X, volume / capacity	0.24	0.58	0.59	0.18	0.49	0.49	0.26	0.60	0.63	0.30	0.53	0.25
d, Delay for Lane Group [s/veh]	11.76	22.26	22.77	12.75	20.53	20.61	46.66	35.61	36.14	25.13	27.37	24.44
Lane Group LOS	B	C	C	B	C	C	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.21	9.15	8.66	0.85	7.10	7.02	0.81	5.41	5.09	1.96	6.44	2.17
50th-Percentile Queue Length [ft/ln]	30.17	228.80	216.61	21.18	177.52	175.50	20.29	135.25	127.16	49.09	161.06	54.18
95th-Percentile Queue Length [veh/ln]	2.17	14.11	13.49	1.52	11.47	11.37	1.46	9.22	8.79	3.53	10.60	3.90
95th-Percentile Queue Length [ft/ln]	54.31	352.84	337.29	38.12	286.78	284.13	36.53	230.62	219.63	88.36	265.12	97.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.76	22.44	22.77	12.75	20.57	20.61	46.66	35.76	36.14	25.13	27.37	24.44
Movement LOS	B	C	C	B	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	21.38			19.90			36.56			26.28		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	24.32											
Intersection LOS	C											
Intersection V/C	0.487											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.9
Level Of Service: C
Volume to Capacity (v/c): 0.545

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	100	970	180	30	870	40	50	190	140	140	220	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	970	180	30	870	40	50	190	140	140	220	50
Peak Hour Factor	0.9760	0.9760	0.9760	0.9479	0.9479	0.9479	0.8510	0.8510	0.8510	0.8772	0.8772	0.8772
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	248	46	8	229	11	15	56	41	40	63	14
Total Analysis Volume [veh/h]	102	994	184	32	918	42	59	223	165	160	251	57
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	58			79			72			42		
Bicycle Volume [bicycles/h]	48			57			6			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	7	51	51	40	40	40	26	26	26	35	35
g / C, Green / Cycle	0.07	0.51	0.51	0.40	0.40	0.40	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.06	0.32	0.33	0.07	0.25	0.26	0.05	0.12	0.11	0.31	0.04
s, saturation flow rate [veh/h]	1810	1900	1735	484	1900	1851	1147	1900	1481	1333	1486
c, Capacity [veh/h]	130	978	893	139	755	736	73	488	380	475	524
d1, Uniform Delay [s]	45.66	17.24	17.58	39.82	24.36	24.45	50.00	31.28	31.07	30.00	21.76
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.94	2.91	3.55	3.86	4.15	4.38	7.94	0.25	0.29	18.64	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.62	0.64	0.23	0.64	0.65	0.81	0.46	0.43	0.87	0.11
d, Delay for Lane Group [s/veh]	49.61	20.15	21.13	43.68	28.51	28.83	57.94	31.53	31.36	48.64	21.80
Lane Group LOS	D	C	C	D	C	C	E	C	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.62	10.17	9.98	0.87	9.86	9.78	1.62	4.46	3.28	10.29	0.89
50th-Percentile Queue Length [ft/ln]	65.46	254.23	249.56	21.77	246.61	244.59	40.38	111.49	82.09	257.21	22.13
95th-Percentile Queue Length [veh/ln]	4.71	15.40	15.16	1.57	15.02	14.91	2.91	7.92	5.91	15.55	1.59
95th-Percentile Queue Length [ft/ln]	117.82	384.97	379.11	39.18	375.38	372.83	72.69	198.08	147.76	388.72	39.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.61	20.54	21.13	43.68	28.66	28.83	57.94	31.53	31.36	48.64	48.64	21.80
Movement LOS	D	C	C	D	C	C	E	C	C	D	D	C
d_A, Approach Delay [s/veh]	22.94		29.15			34.96			45.37			
Approach LOS	C		C			C			D			
d_I, Intersection Delay [s/veh]	29.85											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 70.1
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.525

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	80	1250	120	20	1140	20	6	70	70	66	110	40
Base Volume Input [veh/h]	80	1250	120	20	1140	20	6	70	70	66	110	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	1250	120	20	1140	20	6	70	70	66	110	40
Peak Hour Factor	0.9193	0.9193	0.9193	0.9119	0.9119	0.9119	0.8750	0.7635	0.7635	0.9427	0.8293	0.8293
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	340	33	5	313	5	2	23	23	18	33	12
Total Analysis Volume [veh/h]	87	1360	131	22	1250	22	7	92	92	70	133	48
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			32			25			16		
Bicycle Volume [bicycles/h]	13			12			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	2	7	4	6	5	2	3	1	6	8
Auxiliary Signal Groups								2.3				
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	0	7	7
Maximum Green [s]	15	30	40	15	30	40	0	40	15	0	40	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	30	0	30	0	0	30	0	30	30	0	30	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	18	17	0	18	17	0	17	0	0	17	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	0.0	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	6	33	33	3	30	30	40	40
g / C, Green / Cycle	0.07	0.37	0.37	0.03	0.33	0.33	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.40	0.41	0.01	0.34	0.34	0.11	0.10
s, saturation flow rate [veh/h]	1810	1900	1821	1810	1900	1883	1717	1795
c, Capacity [veh/h]	126	701	672	62	633	627	762	797
d1, Uniform Delay [s]	40.95	28.43	28.43	42.54	30.04	30.04	15.59	15.48
k, delay calibration	0.04	0.50	0.50	0.04	0.43	0.44	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.49	55.71	65.17	1.30	35.26	36.49	0.75	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

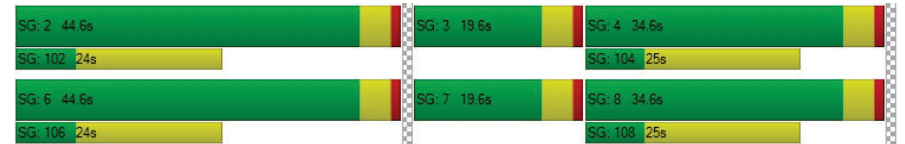
X, volume / capacity	0.69	1.07	1.10	0.36	1.01	1.01	0.24	0.23
d, Delay for Lane Group [s/veh]	43.44	84.15	93.60	43.84	65.30	66.53	16.34	16.15
Lane Group LOS	D	F	F	D	F	F	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.95	25.16	25.88	0.50	19.28	19.32	2.43	2.36
50th-Percentile Queue Length [ft/ln]	48.78	628.88	646.92	12.41	482.09	483.07	60.73	59.11
95th-Percentile Queue Length [veh/ln]	3.51	35.07	36.49	0.89	26.63	26.74	4.37	4.26
95th-Percentile Queue Length [ft/ln]	87.81	876.73	912.29	22.33	665.68	668.50	109.31	106.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.44	88.37	93.60	43.84	65.90	66.53	0.00	16.34	16.34	0.00	16.15	16.15
Movement LOS	D	F	F	D	E	E		B	B		B	B
d_A, Approach Delay [s/veh]	86.33		65.54		16.34		16.15					
Approach LOS	F		E		B		B					
d_I, Intersection Delay [s/veh]	70.11											
Intersection LOS	E											
Intersection V/C	0.525											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized Delay (sec / veh): 90.8
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.959

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	260	680	0	1210	40	0	0	0	0	720	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	680	0	1210	40	0	0	0	0	720	250	800
Peak Hour Factor	0.8698	0.8698	1.0000	1.0000	0.8931	0.8931	1.0000	1.0000	1.0000	0.9451	0.9451	0.9451
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	195	0	339	11	0	0	0	0	190	66	212
Total Analysis Volume [veh/h]	299	782	0	1355	45	0	0	0	0	762	265	846
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1			10			43		
Bicycle Volume [bicycles/h]	3			0			5			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	23	55	0	0	32	32	0	0	0	35	35	35
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	50	29	29	30	30	30	30
g / C, Green / Cycle	0.18	0.56	0.32	0.32	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.17	0.22	0.26	0.25	0.54	0.26	0.29	0.53
s, saturation flow rate [veh/h]	1810	3618	3618	1866	900	1847	1475	900
c, Capacity [veh/h]	334	2026	1174	606	304	624	498	304
d1, Uniform Delay [s]	35.86	11.11	27.66	27.37	29.80	26.74	27.93	29.80
k, delay calibration	0.23	0.50	0.50	0.50	0.50	0.24	0.32	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.09	0.56	5.60	9.16	279.3	4.54	12.49	267.0
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.39	0.79	0.77	1.59	0.78	0.87	1.56
d, Delay for Lane Group [s/veh]	51.95	11.67	33.27	36.53	309.1	31.28	40.42	296.8
Lane Group LOS	D	B	C	D	F	C	D	F
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	7.76	4.21	9.72	10.25	29.55	9.30	9.68	28.51
50th-Percentile Queue Length [ft/ln]	194.03	105.13	242.99	256.35	738.7	232.6	242.1	712.7
95th-Percentile Queue Length [veh/ln]	12.33	7.57	14.83	15.51	48.11	14.31	14.79	46.33
95th-Percentile Queue Length [ft/ln]	308.25	189.20	370.81	387.65	1202.	357.6	369.6	1158.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.95	11.67	0.00	0.00	34.28	36.53	0.00	0.00	0.00	201.81	33.37	188.05
Movement LOS	D	B			C	D				F	C	F
d_A, Approach Delay [s/veh]	22.81		34.36			0.00		172.14				
Approach LOS	C		C			A		F				
d_I, Intersection Delay [s/veh]	90.76											
Intersection LOS	F											
Intersection V/C	0.959											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 37.8
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.807

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	800	740	800	1090	0	200	480	270	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	800	740	800	1090	0	200	480	270	0	0	0
Peak Hour Factor	1.0000	0.8776	0.8776	0.8633	0.8633	1.0000	0.7468	0.7468	0.7468	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	228	211	232	316	0	67	161	90	0	0	0
Total Analysis Volume [veh/h]	0	912	843	927	1263	0	268	643	362	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			15			37		
Bicycle Volume [bicycles/h]	0			5			8			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	20	30	0	37	37	37	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	30	30	23	53	0	37	37	37	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	22	55	25	25	25
g / C, Green / Cycle	0.32	0.32	0.32	0.24	0.62	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.29	0.26	0.35	0.26	0.25	0.23
s, saturation flow rate [veh/h]	3618	1522	1522	3514	3618	1847	1729	1585
c, Capacity [veh/h]	1166	491	491	852	2228	521	488	447
d1, Uniform Delay [s]	27.31	29.06	29.06	34.12	10.21	31.17	31.14	30.09
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.11	0.11	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	2.37	2.37	57.58	1.05	6.46	6.63	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

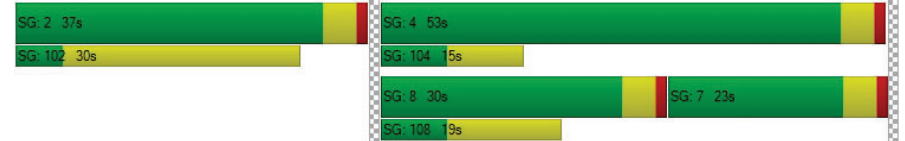
X, volume / capacity	0.75	0.89	0.89	1.09	0.57	0.90	0.90	0.81
d, Delay for Lane Group [s/veh]	27.69	31.43	31.43	91.70	11.27	37.63	37.77	32.03
Lane Group LOS	C	C	C	F	B	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.08	8.86	8.86	15.84	6.84	10.33	9.66	7.21
50th-Percentile Queue Length [ft/ln]	202.03	221.45	221.45	395.99	171.09	258.26	241.52	180.23
95th-Percentile Queue Length [veh/ln]	12.74	13.74	13.74	23.45	11.13	15.60	14.76	11.61
95th-Percentile Queue Length [ft/ln]	318.58	343.47	343.47	586.24	278.34	390.04	368.95	290.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	27.69	31.43	91.70	11.27	0.00	37.63	37.72	32.03	0.00	0.00	0.00
Movement LOS		C	C	F	B		D	D	C			
d_A, Approach Delay [s/veh]		29.56		45.31			36.08			0.00		
Approach LOS		C		D			D			A		
d_I, Intersection Delay [s/veh]		37.76										
Intersection LOS		D										
Intersection V/C		0.807										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 7.5
Level Of Service: A
Volume to Capacity (v/c): 0.358

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	840	140	60	570	40	90
Base Volume Input [veh/h]	840	140	60	570	40	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	840	140	60	570	40	90
Peak Hour Factor	0.8732	0.8732	0.9247	0.9247	0.8357	0.8357
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	241	40	16	154	12	27
Total Analysis Volume [veh/h]	962	160	65	616	48	108
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	79		91		60	
Bicycle Volume [bicycles/h]	2		28		7	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	76	76	76	76	11	11
g / C, Green / Cycle	0.76	0.76	0.76	0.76	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.27	0.10	0.11	0.17	0.03	0.09
s, saturation flow rate [veh/h]	3618	1557	592	3618	1405	1174
c, Capacity [veh/h]	2757	1187	459	2757	149	124
d1, Uniform Delay [s]	3.86	3.16	6.75	3.41	41.37	44.01
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.24	0.65	0.19	0.46	6.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.13	0.14	0.22	0.32	0.87
d, Delay for Lane Group [s/veh]	4.21	3.39	7.39	3.60	41.84	50.85
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.58	0.74	0.57	1.45	1.10	2.82
50th-Percentile Queue Length [ft/ln]	64.38	18.56	14.37	36.37	27.47	70.50
95th-Percentile Queue Length [veh/ln]	4.64	1.34	1.03	2.62	1.98	5.08
95th-Percentile Queue Length [ft/ln]	115.88	33.40	25.86	65.47	49.44	126.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.21	3.39	7.39	3.60	41.84	50.85
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	4.09		3.96		48.07	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	7.55					
Intersection LOS	A					
Intersection V/C	0.358					

Sequence

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



Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 93.5
Level Of Service: F
Volume to Capacity (v/c): 0.690

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	30	200	410	70	90	10	20	350	60	110	60	30
Base Volume Input [veh/h]	30	200	410	70	90	10	20	350	60	110	60	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	200	410	70	90	10	20	350	60	110	60	30
Peak Hour Factor	0.9761	0.9761	0.9761	0.8833	0.8833	0.8833	0.7985	0.7985	0.7985	0.9583	0.9583	0.9583
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	51	105	20	25	3	6	110	19	29	16	8
Total Analysis Volume [veh/h]	31	205	420	79	102	11	25	438	75	115	63	31
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	38			99			69			77		
Bicycle Volume [bicycles/h]	1			1			56			15		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	45	0	10	45	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	46	38	46	39	16	16	16	16
g / C, Green / Cycle	0.58	0.47	0.58	0.49	0.21	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.38	0.08	0.06	0.02	0.28	0.13	0.06
s, saturation flow rate [veh/h]	1358	1625	957	1847	1184	1810	901	1674
c, Capacity [veh/h]	877	765	418	905	251	372	90	344
d1, Uniform Delay [s]	7.25	18.26	12.37	11.13	30.57	31.87	40.12	26.82
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.15	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	9.43	1.00	0.28	0.06	175.14	131.11	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

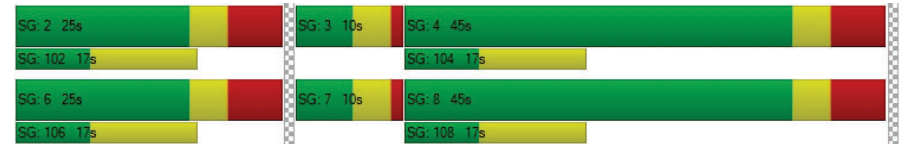
X, volume / capacity	0.04	0.82	0.19	0.12	0.10	1.38	1.28	0.27
d, Delay for Lane Group [s/veh]	7.26	27.70	13.37	11.42	30.63	207.01	171.23	26.98
Lane Group LOS	A	C	B	B	C	F	F	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.20	10.81	0.65	1.09	0.42	25.06	5.01	1.47
50th-Percentile Queue Length [ft/ln]	4.95	270.23	16.25	27.23	10.55	626.38	125.22	36.67
95th-Percentile Queue Length [veh/ln]	0.36	16.20	1.17	1.96	0.76	38.59	9.02	2.64
95th-Percentile Queue Length [ft/ln]	8.92	405.03	29.25	49.01	18.99	964.67	225.39	66.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.26	27.70	27.70	13.37	11.42	11.42	30.63	207.01	207.01	171.23	26.98	26.98
Movement LOS	A	C	C	B	B	B	C	F	F	F	C	C
d_A, Approach Delay [s/veh]	26.73		12.22		198.82		106.35					
Approach LOS	C		B		F		F					
d_I, Intersection Delay [s/veh]	93.46											
Intersection LOS	F											
Intersection V/C	0.690											

Sequence

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



Intersection Level Of Service Report
Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 11.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.409

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Northbound				Southbound				Eastbound				Westbound				
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Base Volume Input [veh/h]	40	0	1090	210	190	880	0	32	1085	209	50	0	50	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	0	1090	210	190	880	0	32	1085	209	50	0	50	0	0	0	0
Peak Hour Factor	1.000	1.000	0.913	0.913	0.9733	0.9733	1.0000	1.0000	1.0000	1.0000	1.0000	0.8241	1.0000	1.0000	0.8241	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	298	57	49	226	0	8	271	52	15	0	15	0	0	0	0
Total Analysis Volume [veh/h]	40	0	1194	230	195	904	0	32	1085	209	61	0	61	0	0	0	0
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	25				40				0				0				
Bicycle Volume [bicycles/h]	0				3				13				0				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	60.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	0	53	0	10	53	0	0	0	0	27	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	56	56	66	58	15	15
g / C, Green / Cycle	0.04	0.62	0.62	0.73	0.64	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.14	0.31	0.25	0.04	0.04
s, saturation flow rate [veh/h]	1810	3618	1615	633	3618	1729	1501
c, Capacity [veh/h]	64	2245	1002	489	2321	293	254
d1, Uniform Delay [s]	42.79	9.67	7.55	6.58	7.70	32.18	32.36
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.59	0.91	0.53	2.42	0.49	0.13	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

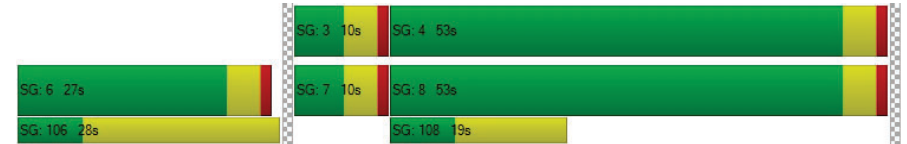
X, volume / capacity	0.62	0.53	0.23	0.40	0.39	0.21	0.24
d, Delay for Lane Group [s/veh]	46.38	10.57	8.09	9.00	8.20	32.31	32.54
Lane Group LOS	D	B	A	A	A	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	6.15	1.91	1.18	3.81	1.14	1.15
50th-Percentile Queue Length [ft/ln]	23.32	153.74	47.86	29.52	95.28	28.54	28.75
95th-Percentile Queue Length [veh/ln]	1.68	10.22	3.45	2.13	6.86	2.05	2.07
95th-Percentile Queue Length [ft/ln]	41.97	255.41	86.15	53.14	171.50	51.37	51.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.38	0.00	10.57	8.09	9.00	8.20	0.00	0.00	0.00	0.00	32.31	0.00	32.54
Movement LOS	D		B	A	A	A					C		C
d_A, Approach Delay [s/veh]	11.16			8.34			0.00			32.42			
Approach LOS	B			A			A			C			
d_I, Intersection Delay [s/veh]	10.97												
Intersection LOS	B												
Intersection V/C	0.409												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 47.4
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.008

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	30	2510	2	290	2280	30	10	10	20	80	30	300
Base Volume Input [veh/h]	30	2510	2	290	2280	30	10	10	20	80	30	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	2510	2	290	2280	30	10	10	20	80	30	300
Peak Hour Factor	0.8616	0.8616	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	728	1	74	583	8	4	4	8	24	9	90
Total Analysis Volume [veh/h]	35	2913	2	297	2332	31	16	16	32	96	36	361
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	242	242	242	242	242	242	242	242
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	6	137	45	176	176	45	45	95
g / C, Green / Cycle	0.03	0.57	0.19	0.73	0.73	0.19	0.19	0.39
(v / s)_i Volume / Saturation Flow Rate	0.02	0.56	0.16	0.43	0.43	0.28	0.22	0.22
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1887	228	608	1615
c, Capacity [veh/h]	46	2933	339	2633	1373	61	138	630
d1, Uniform Delay [s]	117.32	52.09	95.85	15.74	15.79	92.07	101.38	58.10
k, delay calibration	0.04	0.04	0.09	0.04	0.05	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.87	3.41	5.97	0.08	0.19	130.63	65.06	3.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

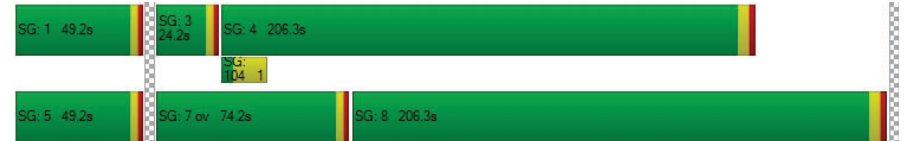
X, volume / capacity	0.75	0.99	0.88	0.59	0.59	1.05	0.95	0.57
d, Delay for Lane Group [s/veh]	126.19	55.50	101.82	15.81	15.98	222.70	166.45	61.87
Lane Group LOS	F	E	F	B	B	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.33	57.83	18.75	20.08	21.16	6.13	11.04	18.52
50th-Percentile Queue Length [ft/ln]	58.21	1445.74	468.64	501.98	529.01	153.22	275.98	462.98
95th-Percentile Queue Length [veh/ln]	4.19	70.30	25.85	27.43	28.70	10.42	16.49	25.58
95th-Percentile Queue Length [ft/ln]	104.78	1757.53	646.15	685.70	717.61	260.59	412.20	639.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	126.19	55.50	0.00	101.82	15.87	15.98	222.70	222.70	222.70	166.45	166.45	61.87
Movement LOS	F	E		F	B	B	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	56.34		25.47			222.70			89.87			
Approach LOS	E		C			F			F			
d_I, Intersection Delay [s/veh]	47.43											
Intersection LOS	D											
Intersection V/C	1.008											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 140.3
Level Of Service: F
Volume to Capacity (v/c): 1.192

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	240	530	110	30	440	80	60	130	190	0	60	120	70
Base Volume Input [veh/h]	240	530	110	30	440	80	60	130	190	0	60	120	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	240	530	110	30	440	80	60	130	190	0	60	120	70
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	141	29	9	126	23	16	36	52	0	19	38	22
Total Analysis Volume [veh/h]	256	565	117	34	503	92	66	142	208	0	75	151	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	3	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.03	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.14	0.30	0.09	0.02	0.26	0.07	0.61	0.14	0.79	0.10
s, saturation flow rate [veh/h]	1810	1900	1266	1810	1900	1352	341	1518	288	860
c, Capacity [veh/h]	189	1152	768	55	1012	720	111	570	101	159
d1, Uniform Delay [s]	44.75	11.02	8.53	47.86	14.86	11.72	40.54	22.58	41.20	36.98
k, delay calibration	0.18	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	172.01	1.49	0.42	4.07	1.75	0.37	429.00	0.15	585.54	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

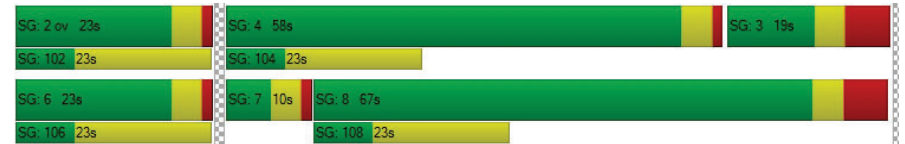
X, volume / capacity	1.35	0.49	0.15	0.61	0.50	0.13	1.88	0.36	2.23	0.55
d, Delay for Lane Group [s/veh]	216.76	12.52	8.95	51.93	16.60	12.09	469.54	22.73	626.74	38.09
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	13.67	6.94	1.13	0.90	7.38	1.07	15.95	3.57	18.95	1.96
50th-Percentile Queue Length [ft/ln]	341.69	173.43	28.13	22.39	184.62	26.70	398.67	89.18	473.86	49.11
95th-Percentile Queue Length [veh/ln]	21.96	11.26	2.03	1.61	11.84	1.92	27.61	6.42	32.80	3.54
95th-Percentile Queue Length [ft/ln]	548.90	281.42	50.64	40.29	296.04	48.06	690.17	160.52	820.10	88.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	216.76	12.52	8.95	51.93	16.60	12.09	469.54	469.54	22.73	626.7	626.7	626.7	38.09
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	67.82			17.85			246.13			461.77			
Approach LOS	E			B			F			F			
d_I, Intersection Delay [s/veh]	140.28												
Intersection LOS	F												
Intersection V/C	1.192												

Sequence

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



Intersection Level Of Service Report

Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	22.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.392

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	640	160	110	560	240	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	640	160	110	560	240	270
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	43	29	148	69	78
Total Analysis Volume [veh/h]	692	173	116	591	276	311
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.19	0.13	0.13	0.16	0.16	0.12	0.17
s, saturation flow rate [veh/h]	3618	1371	905	3618	1299	1679	1064
c, Capacity [veh/h]	2099	795	657	2509	226	293	186
d1, Uniform Delay [s]	10.90	10.08	5.64	5.61	40.56	38.51	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.04	0.16
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	0.63	0.59	0.22	14.32	0.95	38.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

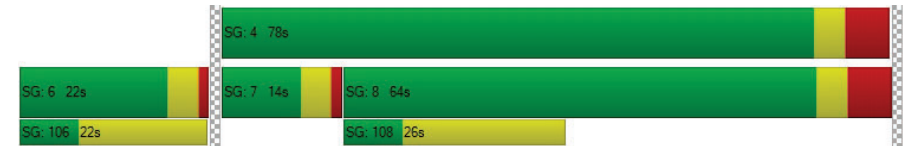
X, volume / capacity	0.33	0.22	0.18	0.24	0.92	0.66	1.00
d, Delay for Lane Group [s/veh]	11.32	10.71	6.22	5.83	54.88	39.46	79.74
Lane Group LOS	B	B	A	A	D	D	F
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.87	1.87	0.80	2.06	5.86	4.46	6.49
50th-Percentile Queue Length [ft/ln]	96.85	46.86	20.09	51.55	146.42	111.39	162.24
95th-Percentile Queue Length [veh/ln]	6.97	3.37	1.45	3.71	9.83	7.92	10.68
95th-Percentile Queue Length [ft/ln]	174.33	84.36	36.16	92.79	245.64	197.94	267.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.32	10.71	6.22	5.83	50.62	64.45
Movement LOS	B	B	A	A	D	E
d_A, Approach Delay [s/veh]	11.20		5.89		57.69	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	22.10					
Intersection LOS	C					
Intersection V/C	0.392					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 13.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.367

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	640	100	70	730	110	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	640	100	70	730	110	110
Peak Hour Factor	0.9093	0.9093	0.9413	0.9413	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	176	27	19	194	32	32
Total Analysis Volume [veh/h]	704	110	74	776	130	130
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389		253	
Bicycle Volume [bicycles/h]	6		7		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.19	0.08	0.10	0.21	0.15
s, saturation flow rate [veh/h]	3618	1339	745	3618	1707
c, Capacity [veh/h]	2235	827	446	2235	427
d1, Uniform Delay [s]	9.05	7.94	13.76	9.28	33.15
k, delay calibration	0.50	0.50	0.50	0.50	0.06
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.33	0.80	0.43	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

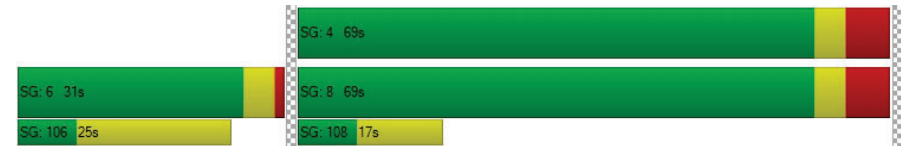
X, volume / capacity	0.31	0.13	0.17	0.35	0.61
d, Delay for Lane Group [s/veh]	9.42	8.28	14.56	9.71	33.97
Lane Group LOS	A	A	B	A	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.49	1.00	1.00	3.94	5.53
50th-Percentile Queue Length [ft/ln]	87.18	25.04	24.95	98.61	138.29
95th-Percentile Queue Length [veh/ln]	6.28	1.80	1.80	7.10	9.39
95th-Percentile Queue Length [ft/ln]	156.92	45.06	44.91	177.49	234.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.42	8.28	14.56	9.71	33.97	33.97
Movement LOS	A	A	B	A	C	C
d_A, Approach Delay [s/veh]	9.27		10.13		33.97	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	12.99					
Intersection LOS	B					
Intersection V/C	0.367					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	30.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	660	210	110	700	160	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	660	210	110	700	160	130
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	186	59	31	200	44	36
Total Analysis Volume [veh/h]	744	237	126	800	176	143
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.21	0.18	0.14	0.22	0.21	0.12
s, saturation flow rate [veh/h]	3618	1296	875	3618	832	1238
c, Capacity [veh/h]	2190	785	668	2618	120	325
d1, Uniform Delay [s]	9.80	9.53	4.72	4.90	42.78	30.73
k, delay calibration	0.50	0.50	0.50	0.50	0.28	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	0.99	0.63	0.30	233.74	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.30	0.19	0.31	1.47	0.44
d, Delay for Lane Group [s/veh]	10.22	10.52	5.34	5.20	276.52	31.08
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.92	2.56	0.76	2.57	10.73	2.87
50th-Percentile Queue Length [ft/ln]	97.96	64.07	19.10	64.19	268.15	71.84
95th-Percentile Queue Length [veh/ln]	7.05	4.61	1.38	4.62	18.42	5.17
95th-Percentile Queue Length [ft/ln]	176.33	115.33	34.39	115.54	460.38	129.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.22	10.52	5.34	5.20	276.52	31.08
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.29		5.22		166.49	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	30.57					
Intersection LOS	C					
Intersection V/C	0.443					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 47.3
Level Of Service: D
Volume to Capacity (v/c): 0.511

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	40	800	142	67	840	80	50	13	110	150	40	140
Base Volume Input [veh/h]	40	800	142	67	840	80	50	13	110	150	40	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	800	142	67	840	80	50	13	110	150	40	140
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	224	41	18	221	21	15	6	32	42	11	39
Total Analysis Volume [veh/h]	45	897	165	71	882	84	59	24	129	169	45	157
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	81	81	72	72	13	20	20
g / C, Green / Cycle	0.54	0.54	0.48	0.48	0.09	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.06	0.25	0.25	0.26	0.11	0.12	0.12
s, saturation flow rate [veh/h]	694	3618	1900	1832	1671	1828	1283
c, Capacity [veh/h]	336	1960	917	884	149	250	175
d1, Uniform Delay [s]	19.05	20.93	26.91	27.25	68.27	63.31	63.69
k, delay calibration	0.04	0.50	0.50	0.50	0.46	0.04	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.77	2.16	2.42	156.40	3.48	9.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

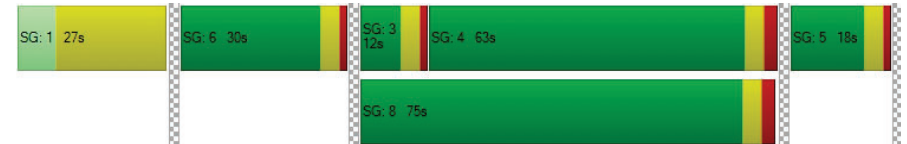
X, volume / capacity	0.13	0.46	0.53	0.55	1.26	0.86	0.90
d, Delay for Lane Group [s/veh]	19.12	21.70	29.07	29.67	224.67	66.79	73.04
Lane Group LOS	B	C	C	C	F	E	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.75	9.87	12.63	12.83	12.21	8.32	6.41
50th-Percentile Queue Length [ft/ln]	18.84	246.79	315.86	320.82	305.18	207.88	160.35
95th-Percentile Queue Length [veh/ln]	1.36	15.02	18.46	18.71	19.44	13.04	10.57
95th-Percentile Queue Length [ft/ln]	33.92	375.60	461.60	467.69	485.89	326.10	264.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.12	21.70	0.00	0.00	29.34	29.67	224.67	0.00	224.67	66.79	66.79	73.04
Movement LOS	B	C			C	C	F		F	E	E	E
d_A, Approach Delay [s/veh]	21.58		29.37			224.67		69.44				
Approach LOS	C		C			F		E				
d_I, Intersection Delay [s/veh]	47.30											
Intersection LOS	D											
Intersection V/C	0.511											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 24.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.527

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	300	710	1010	70	110	660
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	300	710	1010	70	110	660
Peak Hour Factor	0.9528	0.9528	0.9744	0.9744	0.9594	0.9594
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	186	259	18	29	172
Total Analysis Volume [veh/h]	315	745	1037	72	115	688
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	13	80	80	80	14	31
g / C, Green / Cycle	0.11	0.66	0.66	0.66	0.11	0.26
(v / s)_i Volume / Saturation Flow Rate	0.09	0.21	0.29	0.05	0.09	0.24
s, saturation flow rate [veh/h]	3514	3618	3618	1347	1228	2859
c, Capacity [veh/h]	379	2403	2403	895	138	740
d1, Uniform Delay [s]	52.42	8.51	9.47	7.14	52.07	43.36
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.83	0.34	0.57	0.18	4.80	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

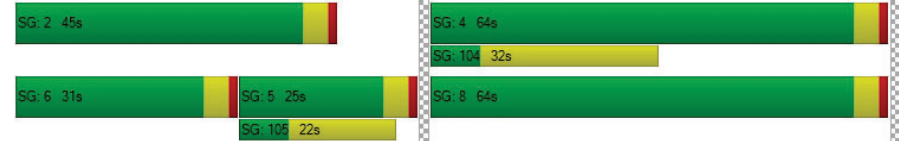
X, volume / capacity	0.83	0.31	0.43	0.08	0.83	0.93
d, Delay for Lane Group [s/veh]	54.25	8.85	10.04	7.32	56.88	45.74
Lane Group LOS	D	A	B	A	E	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.74	4.01	6.23	0.68	3.74	10.73
50th-Percentile Queue Length [ft/ln]	118.53	100.22	155.68	16.89	93.48	268.26
95th-Percentile Queue Length [veh/ln]	8.31	7.22	10.32	1.22	6.73	16.10
95th-Percentile Queue Length [ft/ln]	207.80	180.40	257.99	30.40	168.26	402.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.25	8.85	10.04	7.32	56.88	45.74
Movement LOS	D	A	B	A	E	D
d_A, Approach Delay [s/veh]	22.34		9.86		47.33	
Approach LOS	C		A		D	
d_I, Intersection Delay [s/veh]	24.44					
Intersection LOS	C					
Intersection V/C	0.527					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 38.9
Level Of Service: D
Volume to Capacity (v/c): 0.572

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Northbound				Northeastbound				Southwestbound			
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	60	100	80	3	340	98	180	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	60	100	80	3	340	98	180	220
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	20	33	26	1	90	26	48	59
Total Analysis Volume [veh/h]	0	0	0	0	79	132	106	3	358	103	193	236
Presence of On-Street Parking					No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	6				70				188			
Bicycle Volume [bicycles/h]	33				8				56			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk						No					No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall						Yes			Yes		Yes	
Maximum Recall						No			No		No	
Pedestrian Recall						No			No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	62	62	62
g / C, Green / Cycle	0.42	0.42	0.42	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.08	0.28	0.10	0.16
s, saturation flow rate [veh/h]	1159	1900	1356	1264	1900	1460
c, Capacity [veh/h]	463	799	570	685	989	760
d1, Uniform Delay [s]	27.36	21.56	22.00	19.04	15.36	16.46
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.80	0.41	0.79	2.84	0.44	1.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.16	0.20	0.52	0.20	0.31
d, Delay for Lane Group [s/veh]	28.16	21.97	22.79	21.88	15.80	17.52
Lane Group LOS	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.68	2.24	2.14	6.29	2.89	3.85
50th-Percentile Queue Length [ft/ln]	42.03	56.10	53.50	157.17	72.18	96.23
95th-Percentile Queue Length [veh/ln]	3.03	4.04	3.85	10.40	5.20	6.93
95th-Percentile Queue Length [ft/ln]	75.65	100.98	96.30	259.98	129.92	173.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	28.16	22.02	22.79	0.00	21.88	0.00	15.80	17.52
Movement LOS					C	C	C		C		B	B
d_A, Approach Delay [s/veh]	0.00				23.81				19.08			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	38.88											
Intersection LOS	D											
Intersection V/C	0.572											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	750	120	140	1270	65	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	750	120	140	1270	65	40
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	199	32	39	352	17	10
Total Analysis Volume [veh/h]	1	53	796	127	155	1409	69	42
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	48	48	48
g / C, Green / Cycle	0.29	0.29	0.29	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.10	0.16	0.38	0.39
s, saturation flow rate [veh/h]	373	3618	1278	956	1900	1863
c, Capacity [veh/h]	60	1053	372	335	766	750
d1, Uniform Delay [s]	59.98	38.64	33.47	26.55	34.66	34.96
k, delay calibration	0.04	0.04	0.04	0.04	0.29	0.39
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.29	0.42	0.20	0.37	15.47	21.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

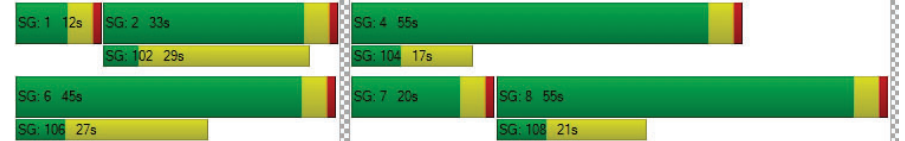
X, volume / capacity	0.88	0.76	0.34	0.46	0.95	0.96
d, Delay for Lane Group [s/veh]	74.28	39.06	33.67	26.92	50.13	56.42
Lane Group LOS	E	D	C	C	D	E
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.85	10.64	2.94	2.92	23.35	24.59
50th-Percentile Queue Length [ft/ln]	46.30	285.97	73.60	72.97	583.82	614.83
95th-Percentile Queue Length [veh/ln]	3.33	15.99	5.30	5.25	31.28	32.73
95th-Percentile Queue Length [ft/ln]	83.33	399.71	132.47	131.34	781.96	818.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	74.28	39.06	33.67	26.92	53.17	0.00	56.42
Movement LOS		E	D	C	C	D		E
d_A, Approach Delay [s/veh]	40.27			50.72				
Approach LOS	D			D				
d_I, Intersection Delay [s/veh]	38.88							
Intersection LOS	D							
Intersection V/C	0.572							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 71.2
 Level Of Service: E
 Volume to Capacity (v/c): 0.392

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	70	120	180	0	20	70	80	0	20	260	70	0	120	360	70
Base Volume Input [veh/h]	0	70	120	180	0	20	70	80	0	20	260	70	0	120	360	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	70	120	180	0	20	70	80	0	20	260	70	0	120	360	70
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	1.000	0.868	0.868	0.868	1.000	0.968	0.968	0.968
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	19	32	48	0	5	19	22	0	6	75	20	0	31	93	18
Total Analysis Volume [veh/h]	0	75	128	192	0	22	76	87	0	23	299	81	0	124	372	72
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall										No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.27	0.02	0.08	0.05	0.11	0.12	0.12
s, saturation flow rate [veh/h]	1242	1686	686	961	3618	1577	1097	1900	1773
c, Capacity [veh/h]	73	261	140	431	1709	745	511	898	838
d1, Uniform Delay [s]	50.02	42.26	41.78	20.09	15.17	14.67	20.29	15.81	15.86
k, delay calibration	0.04	0.10	0.30	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	36.39	107.83	172.20	0.24	0.22	0.29	1.12	0.68	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

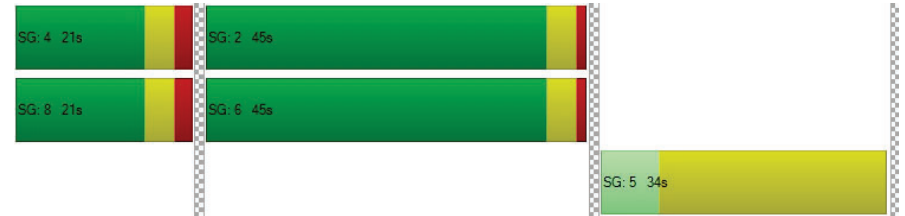
X, volume / capacity	1.03	1.22	1.32	0.05	0.17	0.11	0.24	0.25	0.26
d, Delay for Lane Group [s/veh]	86.41	150.09	213.98	20.33	15.40	14.97	21.41	16.49	16.60
Lane Group LOS	F	F	F	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.54	14.14	10.13	0.37	1.97	1.06	2.08	3.20	3.08
50th-Percentile Queue Length [ft/ln]	63.61	353.42	253.33	9.24	49.20	26.61	52.08	80.06	76.89
95th-Percentile Queue Length [veh/ln]	4.58	22.17	17.08	0.67	3.54	1.92	3.75	5.76	5.54
95th-Percentile Queue Length [ft/ln]	114.49	554.13	426.93	16.63	88.56	47.89	93.74	144.10	138.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	86.41	86.41	150.0	150.0	213.9	213.9	213.9	213.9	20.33	20.33	15.40	14.97	21.41	21.41	16.53	16.60
Movement LOS	F	F	F	F	F	F	F	F	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	138.00				213.98				15.59				17.61			
Approach LOS	F				F				B				B			
d_I, Intersection Delay [s/veh]	71.17															
Intersection LOS	E															
Intersection V/C	0.392															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 29.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.397

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	90	220	130	30	160	40	60	80	60	70	100	90
Base Volume Input [veh/h]	90	220	130	30	160	40	60	80	60	70	100	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	220	130	30	160	40	60	80	60	70	100	90
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	58	34	9	47	12	18	25	18	20	28	26
Total Analysis Volume [veh/h]	95	232	137	35	189	47	74	99	74	79	113	102
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	13	13	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	25	45	45
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.09	0.03	0.13	0.18	0.27
s, saturation flow rate [veh/h]	1162	1900	1546	1167	1815	1399	1100
c, Capacity [veh/h]	195	468	381	205	447	678	542
d1, Uniform Delay [s]	43.54	32.36	31.17	40.49	32.65	17.87	20.52
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.70	0.30	0.21	0.15	0.36	1.51	3.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

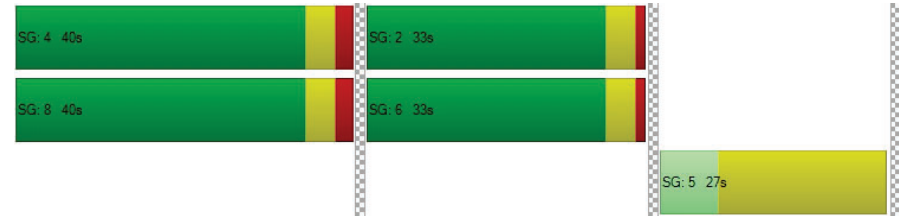
X, volume / capacity	0.49	0.50	0.36	0.17	0.53	0.36	0.54
d, Delay for Lane Group [s/veh]	44.24	32.66	31.38	40.63	33.01	19.38	24.37
Lane Group LOS	D	C	C	D	C	B	C
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.29	4.76	2.71	0.79	4.89	3.88	5.52
50th-Percentile Queue Length [ft/ln]	57.21	118.92	67.65	19.63	122.18	96.99	138.12
95th-Percentile Queue Length [veh/ln]	4.12	8.33	4.87	1.41	8.51	6.98	9.38
95th-Percentile Queue Length [ft/ln]	102.98	208.35	121.77	35.33	212.82	174.57	234.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.24	32.66	31.38	40.63	33.01	33.01	19.38	19.38	19.38	24.37	24.37	24.37
Movement LOS	D	C	C	D	C	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	34.66			34.00			19.38			24.37		
Approach LOS	C			C			B			C		
d_I, Intersection Delay [s/veh]	29.19											
Intersection LOS	C											
Intersection V/C	0.397											

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 96.7
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.135

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	80	210	180	70	150	70	80	140	70	60	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	210	180	70	150	70	80	140	70	60	170	200
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	59	51	19	42	19	22	38	19	17	49	57
Total Analysis Volume [veh/h]	90	236	203	78	167	78	87	152	76	69	195	230
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.25	0.07	0.14	0.88	0.05	0.76	0.15
s, saturation flow rate [veh/h]	1153	1900	800	1162	1766	271	1570	347	1581
c, Capacity [veh/h]	126	370	156	144	344	185	789	220	795
d1, Uniform Delay [s]	48.56	37.01	40.25	47.09	37.64	31.76	12.99	26.19	14.46
k, delay calibration	0.04	0.04	0.40	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.79	0.69	168.75	1.17	1.04	164.30	0.24	125.74	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

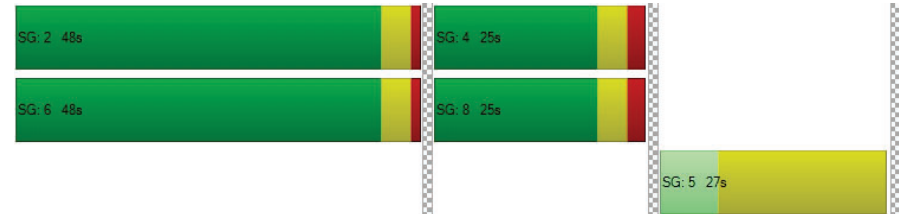
X, volume / capacity	0.71	0.64	1.30	0.54	0.71	1.29	0.10	1.20	0.29
d, Delay for Lane Group [s/veh]	51.35	37.70	209.00	48.26	38.68	196.06	13.23	151.93	15.38
Lane Group LOS	D	D	F	D	D	F	B	F	B
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.32	5.26	11.02	1.96	5.58	13.08	0.92	10.40	3.14
50th-Percentile Queue Length [ft/ln]	57.92	131.54	275.46	49.12	139.47	326.92	23.11	260.09	78.47
95th-Percentile Queue Length [veh/ln]	4.17	9.02	18.44	3.54	9.45	22.10	1.66	17.55	5.65
95th-Percentile Queue Length [ft/ln]	104.26	225.58	460.96	88.42	236.32	552.48	41.60	438.75	141.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.35	37.70	209.00	48.26	38.68	38.68	196.06	196.06	13.23	151.93	151.93	15.38
Movement LOS	D	D	F	D	D	D	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	105.76			40.99			151.95			88.35		
Approach LOS	F			D			F			F		
d_I, Intersection Delay [s/veh]	96.75											
Intersection LOS	F											
Intersection V/C	1.135											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.2
Level Of Service: C
Volume to Capacity (v/c): 0.281

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	50	210	100	70	170	40	70	150	100	70	160	200
Base Volume Input [veh/h]	50	210	100	70	170	40	70	150	100	70	160	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	210	100	70	170	40	70	150	100	70	160	200
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	62	30	19	45	11	18	39	26	20	46	58
Total Analysis Volume [veh/h]	59	249	119	75	182	43	73	157	105	81	185	231
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	22	22	22	22	45	45	45	45	45
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.45	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.08	0.07	0.12	0.06	0.15	0.07	0.10	0.15
s, saturation flow rate [veh/h]	1174	1900	1462	1149	1823	1218	1749	1135	1900	1560
c, Capacity [veh/h]	180	425	327	169	408	531	795	458	863	709
d1, Uniform Delay [s]	43.37	34.69	32.82	44.83	34.39	20.65	17.51	23.46	16.49	17.47
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.48	0.25	0.68	0.44	0.54	1.11	0.84	0.57	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

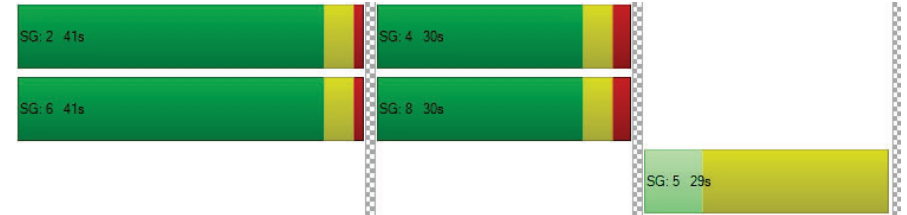
X, volume / capacity	0.33	0.59	0.36	0.44	0.55	0.14	0.33	0.18	0.21	0.33
d, Delay for Lane Group [s/veh]	43.76	35.17	33.07	45.51	34.82	21.19	18.61	24.31	17.06	18.69
Lane Group LOS	D	D	C	D	C	C	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.39	5.34	2.41	1.82	4.79	1.18	3.96	1.44	2.61	3.51
50th-Percentile Queue Length [ft/ln]	34.81	133.62	60.34	45.56	119.65	29.56	98.94	35.89	65.14	87.68
95th-Percentile Queue Length [veh/ln]	2.51	9.14	4.34	3.28	8.37	2.13	7.12	2.58	4.69	6.31
95th-Percentile Queue Length [ft/ln]	62.65	228.40	108.61	82.01	209.34	53.21	178.09	64.61	117.25	157.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.76	35.17	33.07	45.51	34.82	34.82	21.19	18.61	18.61	24.31	17.06	18.69
Movement LOS	D	D	C	D	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	35.77			37.50			19.18			19.00		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	27.19											
Intersection LOS	C											
Intersection V/C	0.281											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 34.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.320

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	20	250	0	29	320	60	66	90	0	90	210
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	250	0	29	320	60	66	90	0	90	210	120
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	67	0	8	86	16	20	27	0	24	56	32
Total Analysis Volume [veh/h]	21	268	0	31	344	64	79	108	0	96	223	128
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	28	28	28	28	63	63
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.18	0.05	0.13	0.14
s, saturation flow rate [veh/h]	1032	1863	1863	1368	1863	1524
c, Capacity [veh/h]	100	437	437	321	972	795
d1, Uniform Delay [s]	56.57	41.04	43.09	36.86	15.75	15.86
k, delay calibration	0.04	0.04	0.29	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.52	8.20	0.11	0.61	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.61	0.79	0.20	0.25	0.26
d, Delay for Lane Group [s/veh]	56.96	41.56	51.29	36.97	16.36	16.65
Lane Group LOS	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.64	7.15	10.45	1.51	3.83	3.34
50th-Percentile Queue Length [ft/ln]	15.89	178.73	261.27	37.86	95.80	83.45
95th-Percentile Queue Length [veh/ln]	1.14	11.53	15.75	2.73	6.90	6.01
95th-Percentile Queue Length [ft/ln]	28.61	288.35	393.81	68.15	172.45	150.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.96	41.56	0.00	0.00	51.29	36.97	0.00	0.00	0.00	16.36	16.47	16.65
Movement LOS	E	D			D	D				B	B	B
d_A, Approach Delay [s/veh]	42.68		49.05		0.00		16.50					
Approach LOS	D		D		A		B					
d_I, Intersection Delay [s/veh]	34.72											
Intersection LOS	C											
Intersection V/C	0.320											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 25.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.441

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Base Volume Input [veh/h]	60	210	130	110	340	80	50	230	40	310	620
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	210	130	110	340	80	50	230	40	310	620	80
Peak Hour Factor	0.9142	0.9142	0.9142	0.8503	0.8503	0.8503	0.9531	0.9531	0.9531	0.9548	0.9548	0.9548
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	57	36	32	100	24	13	60	10	81	162	21
Total Analysis Volume [veh/h]	66	230	142	129	400	94	52	241	42	325	649	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	42	42	42	51	51	51	30	15	15	30	21	21
g / C, Green / Cycle	0.46	0.46	0.46	0.57	0.57	0.57	0.33	0.16	0.16	0.33	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.10	0.21	0.06	0.07	0.08	0.08	0.23	0.20	0.20
s, saturation flow rate [veh/h]	996	1900	1549	1263	1900	1570	796	1900	1653	1419	1900	1767
c, Capacity [veh/h]	400	879	717	747	1080	892	327	309	269	505	451	419
d1, Uniform Delay [s]	22.23	14.79	14.31	9.34	10.62	8.92	22.63	34.15	34.48	25.13	32.60	32.87
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.08	0.10
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.72	0.62	0.50	0.98	0.24	0.08	0.40	0.58	6.21	2.98	4.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

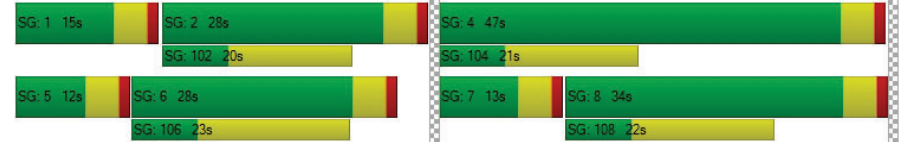
X, volume / capacity	0.17	0.26	0.20	0.17	0.37	0.11	0.16	0.46	0.52	0.64	0.83	0.86
d, Delay for Lane Group [s/veh]	23.12	15.52	14.93	9.84	11.60	9.16	22.72	34.55	35.05	31.34	35.58	37.49
Lane Group LOS	C	B	B	A	B	A	C	C	D	C	D	D
Critical Lane Group	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	2.87	1.74	1.17	4.18	0.83	0.74	2.81	2.76	6.28	7.80	7.73
50th-Percentile Queue Length [ft/ln]	26.94	71.87	43.38	29.25	104.53	20.65	18.48	70.15	68.96	157.12	195.09	193.37
95th-Percentile Queue Length [veh/ln]	1.94	5.17	3.12	2.11	7.53	1.49	1.33	5.05	4.97	10.40	12.38	12.30
95th-Percentile Queue Length [ft/ln]	48.50	129.37	78.08	52.65	188.15	37.17	33.27	126.26	124.13	259.91	309.62	307.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.12	15.52	14.93	9.84	11.60	9.16	22.72	34.76	35.05	31.34	36.39	37.49
Movement LOS	C	B	B	A	B	A	C	C	D	C	D	D
d_A, Approach Delay [s/veh]	16.47		10.87			32.92			34.92			
Approach LOS	B		B			C			C			
d_I, Intersection Delay [s/veh]	25.25											
Intersection LOS	C											
Intersection V/C	0.441											

Sequence

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



Intersection Level Of Service Report

Intersection 29: FOURTH STREET/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 7.9
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.325

Intersection Setup

Name	4th St			4th St			California Ave			California Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			0.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			California Ave			California Ave		
	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Input [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Peak Hour Factor	0.8437	0.8437	0.8437	0.9285	0.9285	0.9285	0.8506	0.8506	0.8506	0.9047	0.9047	0.9047
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	59	16	3	48	5	6	48	14	7	34	15
Total Analysis Volume [veh/h]	72	235	63	13	193	18	26	194	56	28	136	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	62			70			38			61		
Bicycle Volume [bicycles/h]	22			16			7			12		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	25	25	25	25	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	30	30	30	30	30	30	30	30	30	30	30	30
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	17	17	17	17	17	17	15	15	15	15	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C
C, Cycle Length [s]	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	11	11	11	10	10
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.01	0.11	0.16	0.13
s, saturation flow rate [veh/h]	1152	1773	1053	1855	1755	1677
c, Capacity [veh/h]	493	653	420	683	715	692
d1, Uniform Delay [s]	9.89	7.44	10.59	6.98	8.09	7.87
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.19	0.01	0.09	0.13	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

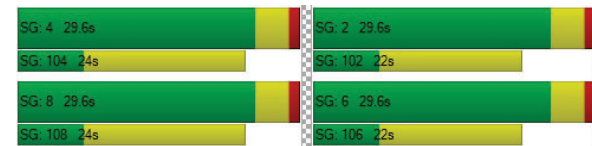
X, volume / capacity	0.15	0.46	0.03	0.31	0.39	0.32
d, Delay for Lane Group [s/veh]	9.94	7.62	10.60	7.08	8.22	7.97
Lane Group LOS	A	A	B	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	0.86	0.05	0.57	1.39	0.70
50th-Percentile Queue Length [ft/ln]	6.94	21.50	1.33	14.18	34.81	17.46
95th-Percentile Queue Length [veh/ln]	0.50	1.55	0.10	1.02	2.51	1.26
95th-Percentile Queue Length [ft/ln]	12.50	38.69	2.39	25.52	62.65	31.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.94	7.62	7.62	10.60	7.08	7.08	8.22	8.22	8.22	7.97	7.97	7.97
Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.07			7.28			8.22			7.97		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.93											
Intersection LOS	A											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.293

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	50	130	100	110	180	60	20	370	80	130	520	110
Base Volume Input [veh/h]	50	130	100	110	180	60	20	370	80	130	520	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	130	100	110	180	60	20	370	80	130	520	110
Peak Hour Factor	0.7730	0.7730	0.7730	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	42	32	30	48	16	5	98	21	36	143	30
Total Analysis Volume [veh/h]	65	168	129	118	194	65	21	394	85	143	574	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.10	0.10	0.04	0.03	0.11	0.05	0.12	0.19	0.19
s, saturation flow rate [veh/h]	1208	1900	1577	1237	1900	1581	761	3618	1579	1180	1900	1768
c, Capacity [veh/h]	171	368	306	190	368	307	205	1187	518	546	844	786
d1, Uniform Delay [s]	44.63	35.73	35.47	45.30	36.27	33.97	35.13	25.40	23.92	17.23	19.06	19.12
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	0.33	0.34	1.23	0.43	0.13	1.00	0.75	0.68	0.09	1.56	1.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

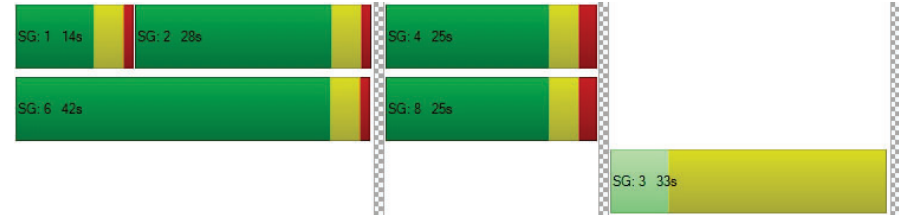
X, volume / capacity	0.38	0.46	0.42	0.62	0.53	0.21	0.10	0.33	0.16	0.26	0.42	0.43
d, Delay for Lane Group [s/veh]	45.14	36.06	35.82	46.53	36.71	34.09	36.14	26.15	24.60	17.32	20.62	20.82
Lane Group LOS	D	D	D	D	D	C	D	C	C	B	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.56	3.59	2.74	2.94	4.22	1.32	0.49	3.61	1.52	1.97	5.91	5.61
50th-Percentile Queue Length [ft/ln]	39.12	89.80	68.54	73.50	105.40	32.99	12.26	90.35	37.91	49.16	147.79	140.22
95th-Percentile Queue Length [veh/ln]	2.82	6.47	4.94	5.29	7.58	2.38	0.88	6.51	2.73	3.54	9.90	9.49
95th-Percentile Queue Length [ft/ln]	70.41	161.64	123.38	132.29	189.59	59.38	22.07	162.64	68.23	88.50	247.48	237.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.14	36.06	35.82	46.53	36.71	34.09	36.14	26.15	24.60	17.32	20.70	20.82
Movement LOS	D	D	D	D	D	C	D	C	C	B	C	C
d_A, Approach Delay [s/veh]	37.60			39.33			26.31			20.14		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.15											
Intersection LOS	C											
Intersection V/C	0.293											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 30.2
Level Of Service: C
Volume to Capacity (v/c): 0.372

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	40	160	60	50	290	60	30	150	100	60	190	50
Base Volume Input [veh/h]	40	160	60	50	290	60	30	150	100	60	190	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	160	60	50	290	60	30	150	100	60	190	50
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	45	17	16	93	19	9	43	28	17	53	14
Total Analysis Volume [veh/h]	45	181	68	64	372	77	34	170	114	66	211	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	41	41	41	41	41	41	27	27
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.41	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.04	0.05	0.12	0.12	0.21	0.25
s, saturation flow rate [veh/h]	956	1900	1555	1222	1900	1766	1542	1338
c, Capacity [veh/h]	364	776	635	472	776	722	454	403
d1, Uniform Delay [s]	25.28	19.33	18.28	23.88	19.89	19.96	32.87	35.24
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.16	0.32
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	0.70	0.34	0.60	0.97	1.08	2.93	11.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

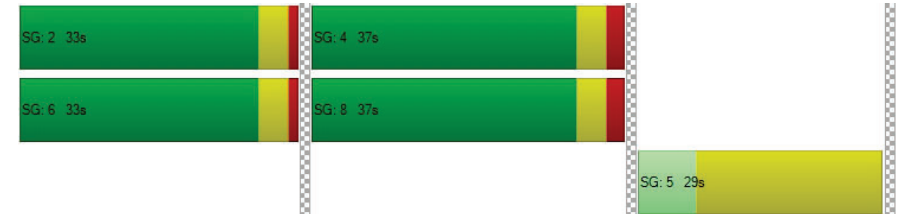
X, volume / capacity	0.12	0.23	0.11	0.14	0.30	0.30	0.70	0.82
d, Delay for Lane Group [s/veh]	25.98	20.03	18.62	24.48	20.86	21.05	35.81	46.81
Lane Group LOS	C	C	B	C	C	C	D	D
Critical Lane Group	No	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.83	2.81	1.01	1.13	3.69	3.55	7.24	9.02
50th-Percentile Queue Length [ft/ln]	20.83	70.30	25.14	28.23	92.14	88.65	181.12	225.59
95th-Percentile Queue Length [veh/ln]	1.50	5.06	1.81	2.03	6.63	6.38	11.66	13.95
95th-Percentile Queue Length [ft/ln]	37.49	126.54	45.25	50.81	165.84	159.56	291.48	348.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.98	20.03	18.62	24.48	20.93	21.05	35.81	35.81	35.81	46.81	46.81	46.81
Movement LOS	C	C	B	C	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	20.61		21.39			35.81			46.81			
Approach LOS	C		C			D			D			
d_I, Intersection Delay [s/veh]	30.17											
Intersection LOS	C											
Intersection V/C	0.372											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.274

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	60	180	80	70	310	30	0	280	130	0	360
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	180	80	70	310	30	0	280	130	0	360	70
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	54	24	19	84	8	0	76	35	0	103	20
Total Analysis Volume [veh/h]	73	218	97	76	334	32	0	303	141	0	410	80
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	52	52	52	52	52	52	18	18	18	18
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52	0.52	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.07	0.11	0.06	0.06	0.10	0.10	0.16	0.09	0.13	0.14
s, saturation flow rate [veh/h]	1032	1900	1583	1182	1900	1834	1900	1560	1900	1780
c, Capacity [veh/h]	521	983	819	574	983	949	341	280	341	320
d1, Uniform Delay [s]	17.16	13.16	12.41	17.65	12.91	12.93	40.02	36.98	38.62	39.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	0.52	0.30	0.48	0.42	0.45	3.15	0.52	1.07	1.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.22	0.12	0.13	0.19	0.19	0.89	0.50	0.72	0.77
d, Delay for Lane Group [s/veh]	17.72	13.68	12.71	18.13	13.33	13.37	43.17	37.50	39.69	40.46
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.07	2.67	1.13	1.12	2.22	2.18	7.48	3.13	5.70	5.79
50th-Percentile Queue Length [ft/ln]	26.68	66.81	28.22	27.96	55.53	54.53	186.88	78.16	142.51	144.63
95th-Percentile Queue Length [veh/ln]	1.92	4.81	2.03	2.01	4.00	3.93	11.96	5.63	9.62	9.73
95th-Percentile Queue Length [ft/ln]	48.03	120.26	50.80	50.32	99.96	98.15	298.98	140.69	240.40	243.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.72	13.68	12.71	18.13	13.35	13.37	0.00	43.17	37.50	0.00	40.00	40.46
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	14.20			14.17			41.37			40.07		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.22											
Intersection LOS	C											
Intersection V/C	0.274											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 40.9
Level Of Service: D
Volume to Capacity (v/c): 0.495

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	150	280	110	80	420	80	0	210	120	190	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	280	110	80	420	80	0	210	120	190	340	80
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	81	32	26	135	26	0	58	33	54	97	23
Total Analysis Volume [veh/h]	173	324	127	103	540	103	0	234	134	217	389	92
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	13	48	48	59	41	41	17	35	29	29	29
g / C, Green / Cycle	0.11	0.40	0.40	0.49	0.34	0.34	0.14	0.29	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.17	0.08	0.09	0.17	0.18	0.12	0.09	0.16	0.20	0.06
s, saturation flow rate [veh/h]	1810	1900	1568	1190	1900	1779	1900	1558	1388	1900	1564
c, Capacity [veh/h]	200	752	621	537	650	608	267	451	285	457	376
d1, Uniform Delay [s]	52.50	26.40	23.83	17.58	31.45	31.53	50.60	33.17	42.95	43.54	36.79
k, delay calibration	0.07	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.50	0.15	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.43	1.80	0.74	0.79	2.82	3.09	3.64	0.14	17.28	6.01	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.43	0.20	0.19	0.51	0.51	0.88	0.30	0.76	0.85	0.24
d, Delay for Lane Group [s/veh]	59.94	28.20	24.58	18.38	34.27	34.62	54.23	33.31	60.23	49.55	36.91
Lane Group LOS	E	C	C	B	C	C	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.49	7.02	2.48	1.63	8.04	7.68	7.15	3.07	6.85	11.63	2.19
50th-Percentile Queue Length [ft/ln]	137.16	175.52	61.99	40.77	200.89	191.88	178.77	76.64	171.21	290.82	54.63
95th-Percentile Queue Length [veh/ln]	9.33	11.37	4.46	2.94	12.68	12.22	11.54	5.52	11.14	17.23	3.93
95th-Percentile Queue Length [ft/ln]	233.19	284.16	111.57	73.39	317.11	305.47	288.41	137.96	278.51	430.66	98.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.94	28.20	24.58	18.38	34.41	34.62	0.00	54.23	33.31	60.23	49.55	36.91
Movement LOS	E	C	C	B	C	C		D	C	E	D	D
d_A, Approach Delay [s/veh]	36.26			32.23			46.61			51.21		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	40.87											
Intersection LOS	D											
Intersection V/C	0.495											

Sequence

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



Intersection Level Of Service Report

Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 23.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.429

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	190	530	0	0	730	100	181	0	84	190	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	190	530	0	0	730	100	181	0	84	190	140	30
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	158	0	0	201	28	52	0	24	52	38	8
Total Analysis Volume [veh/h]	227	634	0	0	806	110	208	0	96	209	154	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	75	75	61	61	16	16
g / C, Green / Cycle	0.62	0.62	0.51	0.51	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.28	0.18	0.24	0.25	0.12	0.11
s, saturation flow rate [veh/h]	800	3618	1900	1801	1810	1669
c, Capacity [veh/h]	483	2255	972	922	241	223
d1, Uniform Delay [s]	12.52	10.33	18.85	19.18	50.97	50.77
k, delay calibration	0.31	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.03	0.31	1.64	1.91	3.66	3.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.28	0.47	0.50	0.87	0.84
d, Delay for Lane Group [s/veh]	14.55	10.64	20.49	21.10	54.63	54.04
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.78	3.81	8.38	8.56	6.45	5.73
50th-Percentile Queue Length [ft/ln]	69.54	95.35	209.41	214.12	161.14	143.20
95th-Percentile Queue Length [veh/ln]	5.01	6.87	13.12	13.36	10.61	9.65
95th-Percentile Queue Length [ft/ln]	125.17	171.64	328.08	334.11	265.23	241.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.55	10.64	0.00	0.00	20.75	21.10	0.00	0.00	0.00	54.63	54.04	54.04
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	11.67		20.79		0.00		54.35					
Approach LOS	B		C		A		D					
d_I, Intersection Delay [s/veh]	23.29											
Intersection LOS	C											
Intersection V/C	0.429											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	28.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		860	410
Base Volume Input [veh/h]	320	0	0	930	860	410
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	320	0	0	930	860	410
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	0	0	263	236	113
Total Analysis Volume [veh/h]	366	0	0	1052	945	450
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	37	37
g / C, Green / Cycle	0.62	0.62	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.29	0.27	0.28
s, saturation flow rate [veh/h]	3618	3618	3514	1586
c, Capacity [veh/h]	2235	2235	1073	484
d1, Uniform Delay [s]	9.73	12.34	39.54	40.36
k, delay calibration	0.50	0.50	0.04	0.23
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.71	0.98	15.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

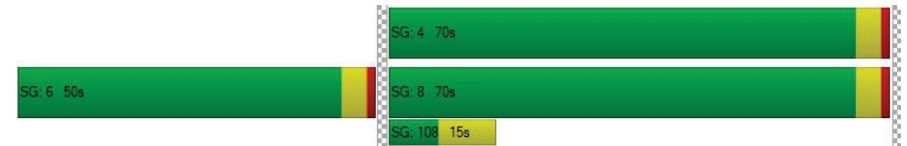
X, volume / capacity	0.16	0.47	0.88	0.93
d, Delay for Lane Group [s/veh]	9.89	13.05	40.52	55.61
Lane Group LOS	A	B	D	E
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.06	7.53	12.49	14.05
50th-Percentile Queue Length [ft/ln]	51.40	188.33	312.26	351.31
95th-Percentile Queue Length [veh/ln]	3.70	12.03	18.29	20.20
95th-Percentile Queue Length [ft/ln]	92.52	300.86	457.16	505.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.89	0.00	0.00	13.05	40.52	55.61
Movement LOS	A			B	D	E
d_A, Approach Delay [s/veh]	9.89		13.05		45.39	
Approach LOS	A		B		D	
d_I, Intersection Delay [s/veh]			28.68			
Intersection LOS			C			
Intersection V/C			0.574			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.5
Level Of Service: C
Volume to Capacity (v/c): 0.557

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	20	290	190	350	1240	160	30	360	60	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	290	190	350	1240	160	30	360	60	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	74	49	98	346	45	9	108	18	0	0	0
Total Analysis Volume [veh/h]	20	297	194	391	1386	179	36	430	72	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	23	23	68	89	89	15	15	15
g / C, Green / Cycle	0.02	0.20	0.20	0.56	0.74	0.74	0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.01	0.16	0.11	0.11	0.41	0.44	0.10	0.10	0.11
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1780	1882	1729	1585
c, Capacity [veh/h]	37	372	352	1985	1406	1317	234	215	197
d1, Uniform Delay [s]	58.14	45.95	43.45	12.78	6.89	7.23	51.20	51.18	51.44
k, delay calibration	0.04	0.20	0.04	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.43	7.26	0.50	0.02	1.59	1.98	2.78	2.96	4.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

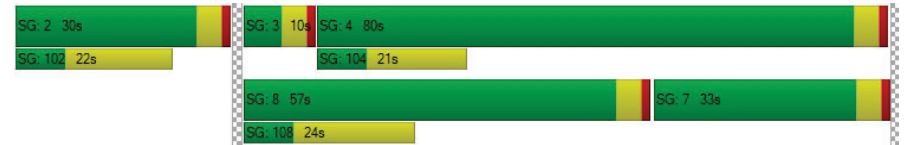
X, volume / capacity	0.54	0.80	0.55	0.20	0.56	0.59	0.82	0.82	0.86
d, Delay for Lane Group [s/veh]	62.57	53.21	43.95	12.80	8.48	9.21	53.99	54.15	55.54
Lane Group LOS	E	D	D	B	A	A	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.65	9.17	5.25	2.56	8.31	8.79	5.78	5.30	5.15
50th-Percentile Queue Length [ft/ln]	16.19	229.18	131.19	64.02	207.66	219.74	144.46	132.42	128.68
95th-Percentile Queue Length [veh/ln]	1.17	14.13	9.00	4.61	13.03	13.65	9.72	9.07	8.87
95th-Percentile Queue Length [ft/ln]	29.13	353.32	225.12	115.23	325.82	341.29	243.01	226.78	221.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	53.21	43.95	12.80	8.80	9.21	53.99	54.40	55.54	0.00	0.00	0.00
Movement LOS	E	D	D	B	A	A	D	D	E			
d_A, Approach Delay [s/veh]	50.06			9.64			54.53			0.00		
Approach LOS	D			A			D			A		
d_I, Intersection Delay [s/veh]	24.55											
Intersection LOS	C											
Intersection V/C	0.557											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.6
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.391

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	90	270	140	40	70	30	30	500	50	80	640	110
Base Volume Input [veh/h]	90	270	140	40	70	30	30	500	50	80	640	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	270	140	40	70	30	30	500	50	80	640	110
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	75	39	11	18	8	8	130	13	21	171	29
Total Analysis Volume [veh/h]	100	299	155	42	74	32	31	522	52	86	685	118
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	26	61	61	61	61	61	61
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.11	0.04	0.06	0.05	0.14	0.04	0.10	0.22	0.23
s, saturation flow rate [veh/h]	1160	1900	1455	1057	1689	683	3618	1422	870	1900	1674
c, Capacity [veh/h]	293	494	378	181	439	389	2198	864	522	1154	1017
d1, Uniform Delay [s]	35.78	32.41	30.56	41.80	29.14	15.05	8.97	7.97	12.94	9.80	10.02
k, delay calibration	0.04	0.05	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.51	0.26	0.24	0.10	0.40	0.25	0.13	0.68	0.86	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

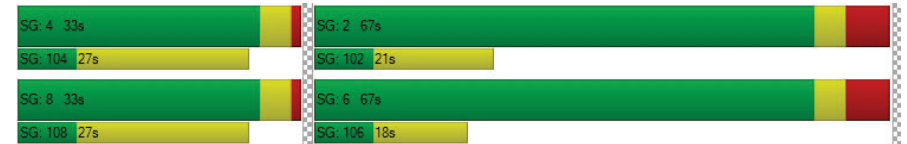
X, volume / capacity	0.34	0.61	0.41	0.23	0.24	0.08	0.24	0.06	0.16	0.36	0.38
d, Delay for Lane Group [s/veh]	36.04	32.92	30.83	42.04	29.24	15.46	9.23	8.10	13.62	10.67	11.12
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.14	6.25	3.05	0.96	1.98	0.43	2.52	0.46	1.10	4.49	4.40
50th-Percentile Queue Length [ft/ln]	53.43	156.18	76.19	24.10	49.54	10.83	63.00	11.60	27.59	112.17	109.97
95th-Percentile Queue Length [veh/ln]	3.85	10.35	5.49	1.74	3.57	0.78	4.54	0.84	1.99	7.96	7.84
95th-Percentile Queue Length [ft/ln]	96.17	258.66	137.15	43.38	89.17	19.50	113.40	20.89	49.67	199.01	195.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.04	32.92	30.83	42.04	29.24	29.24	15.46	9.23	8.10	13.62	10.85	11.12
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	32.90			32.87			9.45			11.15		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	17.63											
Intersection LOS	B											
Intersection V/C	0.391											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 20.9
Level Of Service: C
Volume to Capacity (v/c): 0.316

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	80	380	40	10	100	40	20	230	30	20	180	30
Base Volume Input [veh/h]	80	380	40	10	100	40	20	230	30	20	180	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	380	40	10	100	40	20	230	30	20	180	30
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	103	11	3	30	12	6	67	9	6	54	9
Total Analysis Volume [veh/h]	87	414	44	12	118	47	23	267	35	24	217	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	14	16	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	68	68	68	68	68	23	23
g / C, Green / Cycle	0.68	0.68	0.68	0.68	0.68	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.13	0.01	0.10	0.19	0.17
s, saturation flow rate [veh/h]	1185	1900	1797	933	1736	1710	1626
c, Capacity [veh/h]	806	1290	1220	638	1179	430	412
d1, Uniform Delay [s]	7.80	5.87	5.89	7.81	5.69	36.46	35.26
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.31	0.33	0.05	0.25	2.72	1.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

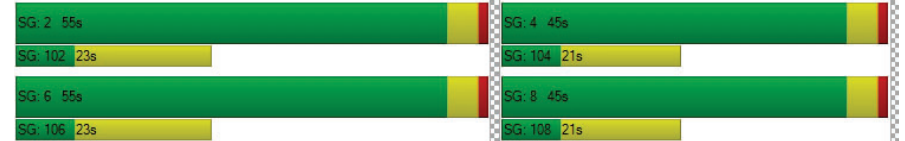
X, volume / capacity	0.11	0.18	0.19	0.02	0.14	0.76	0.67
d, Delay for Lane Group [s/veh]	8.07	6.17	6.23	7.87	5.94	39.18	37.18
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.76	1.64	1.61	0.10	1.14	7.65	6.27
50th-Percentile Queue Length [ft/ln]	18.98	41.08	40.30	2.61	28.47	191.26	156.67
95th-Percentile Queue Length [veh/ln]	1.37	2.96	2.90	0.19	2.05	12.19	10.37
95th-Percentile Queue Length [ft/ln]	34.17	73.95	72.53	4.69	51.25	304.66	259.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.07	6.20	6.23	7.87	5.94	5.94	39.18	39.18	39.18	37.18	37.18	37.18
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	6.50			6.07			39.18			37.18		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	20.88											
Intersection LOS	C											
Intersection V/C	0.316											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.373

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	130	410	110	60	120	30	30	360	40	70	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	410	110	60	120	30	30	360	40	70	300	40
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8552	0.8552	0.8552	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	117	31	17	34	8	9	105	12	22	94	12
Total Analysis Volume [veh/h]	148	467	125	68	135	34	35	421	47	87	375	50
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	27	27	27	27	27	59	59	59	59	59	59
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.59	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.13	0.16	0.18	0.08	0.10	0.03	0.12	0.13	0.10	0.20	0.04
s, saturation flow rate [veh/h]	1157	1900	1626	831	1751	1002	1900	1767	907	1900	1407
c, Capacity [veh/h]	278	521	446	156	480	545	1128	1050	536	1128	836
d1, Uniform Delay [s]	38.73	31.41	31.96	43.98	29.16	14.44	9.42	9.48	13.22	10.27	8.55
k, delay calibration	0.04	0.04	0.08	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.40	1.09	0.71	0.16	0.23	0.42	0.48	0.65	0.79	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.59	0.64	0.44	0.35	0.06	0.21	0.22	0.16	0.33	0.06
d, Delay for Lane Group [s/veh]	39.32	31.81	33.05	44.69	29.33	14.67	9.84	9.97	13.87	11.06	8.69
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.39	6.29	6.05	1.65	3.21	0.46	2.41	2.37	1.13	4.17	0.47
50th-Percentile Queue Length [ft/ln]	84.84	157.25	151.15	41.24	80.33	11.53	60.15	59.19	28.13	104.17	11.67
95th-Percentile Queue Length [veh/ln]	6.11	10.40	10.08	2.97	5.78	0.83	4.33	4.26	2.03	7.50	0.84
95th-Percentile Queue Length [ft/ln]	152.71	260.08	251.96	74.24	144.60	20.76	108.27	106.54	50.63	187.51	21.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.32	32.24	33.05	44.69	29.33	29.33	14.67	9.90	9.97	13.87	11.06	8.69
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	A
d_A, Approach Delay [s/veh]	33.79			33.73			10.24			11.31		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.06											
Intersection LOS	C											
Intersection V/C	0.373											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.5
Level Of Service: C
Volume to Capacity (v/c): 0.388

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	Base Volume Input [veh/h]	150	490	120	40	100	90	110	250	70	60	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	490	120	40	100	90	110	250	70	60	350	50
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	129	31	11	28	25	29	67	19	17	97	14
Total Analysis Volume [veh/h]	157	514	126	45	111	100	117	266	75	66	387	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	28	28	28	28	28	63	63	63	63	63
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.28	0.63	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.13	0.17	0.18	0.06	0.13	0.12	0.19	0.06	0.20	0.04
s, saturation flow rate [veh/h]	1167	1900	1674	800	1655	993	1771	1031	1900	1435
c, Capacity [veh/h]	255	532	469	151	464	579	1112	605	1193	901
d1, Uniform Delay [s]	41.07	31.36	31.77	43.00	29.69	13.58	8.58	12.47	8.70	7.20
k, delay calibration	0.04	0.05	0.08	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.90	0.57	1.18	0.40	0.26	0.79	0.72	0.36	0.72	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.62	0.66	0.30	0.45	0.20	0.31	0.11	0.32	0.06
d, Delay for Lane Group [s/veh]	41.97	31.93	32.95	43.40	29.95	14.37	9.30	12.83	9.42	7.33
Lane Group LOS	D	C	C	D	C	B	A	B	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.75	6.85	6.56	1.06	4.12	1.52	3.27	0.79	3.75	0.45
50th-Percentile Queue Length [ft/ln]	93.74	171.19	164.02	26.56	102.95	37.90	81.76	19.69	93.72	11.14
95th-Percentile Queue Length [veh/ln]	6.75	11.14	10.76	1.91	7.41	2.73	5.89	1.42	6.75	0.80
95th-Percentile Queue Length [ft/ln]	168.73	278.48	269.04	47.80	185.31	68.22	147.17	35.44	168.70	20.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.97	32.29	32.95	43.40	29.95	29.95	14.37	9.30	9.30	12.83	9.42	7.33
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.30			32.31			10.59			9.64		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	22.47											
Intersection LOS	C											
Intersection V/C	0.388											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 22.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.426

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	660	40	20	20	120	0	0	0	6	220	70
Base Volume Input [veh/h]	14	660	40	20	20	120	0	0	0	6	220	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	660	40	20	20	120	0	0	0	6	220	70
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	182	11	6	6	35	0	0	0	2	73	23
Total Analysis Volume [veh/h]	15	726	44	24	24	142	0	0	0	6	291	93
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	41	41	3	49	40
g / C, Green / Cycle	0.41	0.41	0.03	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.20	0.03	0.01	0.10	0.21
s, saturation flow rate [veh/h]	3618	1353	1810	1588	1811
c, Capacity [veh/h]	1494	559	62	783	733
d1, Uniform Delay [s]	21.54	17.80	47.26	14.34	22.48
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.13	0.27	1.48	0.62	2.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

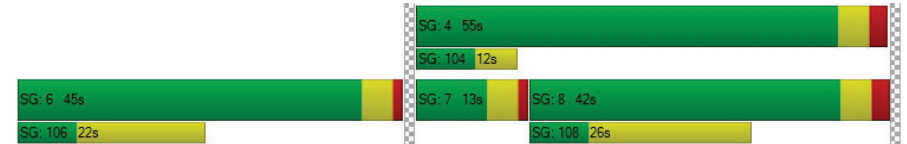
X, volume / capacity	0.49	0.08	0.39	0.21	0.52
d, Delay for Lane Group [s/veh]	22.67	18.07	48.74	14.95	25.14
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.32	0.65	0.60	2.17	7.20
50th-Percentile Queue Length [ft/ln]	158.08	16.31	15.06	54.13	179.97
95th-Percentile Queue Length [veh/ln]	10.45	1.17	1.08	3.90	11.60
95th-Percentile Queue Length [ft/ln]	261.17	29.36	27.10	97.43	289.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	22.67	18.07	48.74	14.95	14.95	0.00	0.00	0.00	0.00	25.14	25.14
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		22.41		19.22		0.00				25.14		
Approach LOS		C		B		A				C		
d_I, Intersection Delay [s/veh]		22.74										
Intersection LOS		C										
Intersection V/C		0.426										

Sequence

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



Intersection Level Of Service Report
Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 19.8
Level Of Service: B
Volume to Capacity (v/c): 0.386

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	20	140	40	40	140	30	40	260	40	30	160	30
Base Volume Input [veh/h]	20	140	40	40	140	30	40	260	40	30	160	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	140	40	40	140	30	40	260	40	30	160	30
Peak Hour Factor	0.8796	0.8796	0.8796	0.8333	0.8333	0.8333	0.9034	0.9034	0.9034	0.8483	0.8483	0.8483
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	40	11	12	42	9	11	72	11	9	47	9
Total Analysis Volume [veh/h]	23	159	45	48	168	36	44	288	44	35	189	35
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	20	71	71	71
g / C, Green / Cycle	0.20	0.20	0.71	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.14	0.17	0.21	0.13	0.02
s, saturation flow rate [veh/h]	1624	1459	1762	1701	1575
c, Capacity [veh/h]	362	332	1291	1248	1117
d1, Uniform Delay [s]	36.88	38.52	5.29	4.78	4.31
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	1.35	0.57	0.32	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.76	0.29	0.18	0.03
d, Delay for Lane Group [s/veh]	37.55	39.87	5.86	5.09	4.36
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.07	6.00	2.55	1.37	0.19
50th-Percentile Queue Length [ft/ln]	126.74	149.91	63.70	34.26	4.85
95th-Percentile Queue Length [veh/ln]	8.76	10.01	4.59	2.47	0.35
95th-Percentile Queue Length [ft/ln]	219.05	250.30	114.67	61.67	8.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.55	37.55	37.55	39.87	39.87	39.87	5.86	5.86	5.86	5.09	5.09	4.36
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.55			39.87			5.86			5.00		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.81											
Intersection LOS	B											
Intersection V/C	0.386											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.5
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.401

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	10	90	40	80	100	40	40	460	30	60	370	60
Base Volume Input [veh/h]	10	90	40	80	100	40	40	460	30	60	370	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	90	40	80	100	40	40	460	30	60	370	60
Peak Hour Factor	0.8437	0.8437	0.8437	0.7884	0.7884	0.7884	0.9314	0.9314	0.9314	0.9359	0.9359	0.9359
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	27	12	25	32	13	11	123	8	16	99	16
Total Analysis Volume [veh/h]	12	107	47	101	127	51	43	494	32	64	395	64
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	65	65	65	65	65	65
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.09	0.11	0.05	0.29	0.02	0.08	0.23	0.05
s, saturation flow rate [veh/h]	1067	1588	1102	1583	897	1710	1375	823	1710	1352
c, Capacity [veh/h]	175	347	195	346	545	1110	893	476	1110	878
d1, Uniform Delay [s]	41.28	33.79	43.44	34.38	11.75	8.64	6.29	14.07	7.99	6.45
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.33	0.80	0.44	0.28	1.29	0.07	0.59	0.89	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.44	0.52	0.51	0.08	0.44	0.04	0.13	0.36	0.07
d, Delay for Lane Group [s/veh]	41.34	34.13	44.24	34.82	12.04	9.93	6.36	14.66	8.88	6.61
Lane Group LOS	D	C	D	C	B	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.27	3.20	2.44	3.77	0.51	5.16	0.24	0.86	3.79	0.50
50th-Percentile Queue Length [ft/ln]	6.74	80.05	61.02	94.26	12.65	128.97	6.08	21.49	94.87	12.49
95th-Percentile Queue Length [veh/ln]	0.49	5.76	4.39	6.79	0.91	8.88	0.44	1.55	6.83	0.90
95th-Percentile Queue Length [ft/ln]	12.14	144.09	109.84	169.66	22.77	222.09	10.94	38.68	170.77	22.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.34	34.13	34.13	44.24	34.82	34.82	12.04	9.93	6.36	14.66	8.88	6.61
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.65			38.23			9.89			9.31		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	17.51											
Intersection LOS	B											
Intersection V/C	0.401											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 20.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.364

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	30	240	30	50	160	30	30	270	40	30	190	50
Base Volume Input [veh/h]	30	240	30	50	160	30	30	270	40	30	190	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	240	30	50	160	30	30	270	40	30	190	50
Peak Hour Factor	0.9166	0.9166	0.9166	0.8625	0.8625	0.8625	0.8118	0.8118	0.8118	0.8521	0.8521	0.8521
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	65	8	14	46	9	9	83	12	9	56	15
Total Analysis Volume [veh/h]	33	262	33	58	186	35	37	333	49	35	223	59
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	66	66	66
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.03	0.16	0.05	0.12	0.20	0.03	0.18
s, saturation flow rate [veh/h]	1147	1848	1095	1805	1807	1571	1720
c, Capacity [veh/h]	203	457	155	446	1234	1038	1177
d1, Uniform Delay [s]	40.38	33.72	45.08	32.29	7.14	5.93	6.95
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.58	0.56	0.32	0.62	0.09	0.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

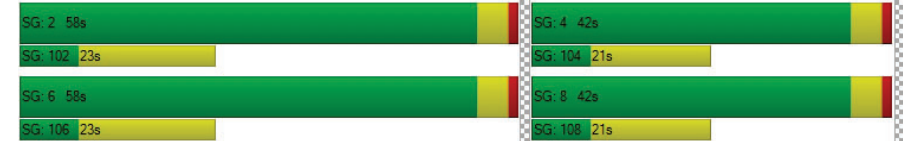
X, volume / capacity	0.16	0.65	0.37	0.50	0.30	0.05	0.27
d, Delay for Lane Group [s/veh]	40.52	34.30	45.64	32.61	7.76	6.02	7.52
Lane Group LOS	D	C	D	C	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.75	6.49	1.43	4.64	3.10	0.34	2.59
50th-Percentile Queue Length [ft/ln]	18.85	162.20	35.86	116.04	77.54	8.57	64.86
95th-Percentile Queue Length [veh/ln]	1.36	10.67	2.58	8.18	5.58	0.62	4.67
95th-Percentile Queue Length [ft/ln]	33.93	266.64	64.55	204.38	139.57	15.42	116.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.52	34.30	34.30	45.64	32.61	32.61	7.76	7.76	6.02	7.52	7.52	7.52
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.92			35.32			7.56			7.52		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	20.00											
Intersection LOS	B											
Intersection V/C	0.364											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 18.8
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.383

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TTL			TTL		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	40	170	40	100	150	40	40	540	40	30	450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	170	40	100	150	40	40	540	40	30	450	80
Peak Hour Factor	0.8983	0.8983	0.8983	0.7948	0.7948	0.7948	0.9768	0.9768	0.9768	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	47	11	31	47	13	10	138	10	8	120	21
Total Analysis Volume [veh/h]	45	189	45	126	189	50	41	553	41	32	478	85
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	60	60	60	60	60	60
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.11	0.13	0.04	0.16	0.16	0.04	0.25	0.05
s, saturation flow rate [veh/h]	1148	1822	1155	1812	928	1900	1841	831	1900	1549
c, Capacity [veh/h]	214	478	218	475	498	1151	1115	500	1151	938
d1, Uniform Delay [s]	39.94	31.20	42.74	31.32	15.27	9.22	9.24	12.20	10.37	8.21
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.29	0.90	0.31	0.32	0.55	0.58	0.25	1.11	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.49	0.58	0.50	0.08	0.26	0.26	0.06	0.42	0.09
d, Delay for Lane Group [s/veh]	40.12	31.49	43.64	31.63	15.59	9.77	9.81	12.45	11.48	8.40
Lane Group LOS	D	C	D	C	B	A	A	B	B	A
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.03	4.82	3.10	4.94	0.57	3.05	3.00	0.39	5.51	0.78
50th-Percentile Queue Length [ft/ln]	25.63	120.50	77.61	123.59	14.13	76.37	75.04	9.66	137.77	19.40
95th-Percentile Queue Length [veh/ln]	1.85	8.42	5.59	8.59	1.02	5.50	5.40	0.70	9.36	1.40
95th-Percentile Queue Length [ft/ln]	46.13	210.52	139.69	214.75	25.44	137.47	135.07	17.39	234.02	34.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.12	31.49	31.49	43.64	31.63	31.63	15.59	9.79	9.81	12.45	11.48	8.40
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	A
d_A, Approach Delay [s/veh]	32.88			35.78			10.16			11.09		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	18.83											
Intersection LOS	B											
Intersection V/C	0.383											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.447

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	210	410	270	40	270	40	20	610	160	130	660	50
Base Volume Input [veh/h]	210	410	270	40	270	40	20	610	160	130	660	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	410	270	40	270	40	20	610	160	130	660	50
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	108	71	12	84	12	5	160	42	35	176	13
Total Analysis Volume [veh/h]	222	434	286	50	336	50	21	639	168	139	703	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.19	0.05	0.10	0.11	0.03	0.18	0.11	0.14	0.19	0.04
s, saturation flow rate [veh/h]	1239	1900	1525	956	1900	1789	740	3618	1487	974	3618	1443
c, Capacity [veh/h]	451	670	538	90	442	416	305	1593	655	554	2008	801
d1, Uniform Delay [s]	24.43	27.14	25.77	49.67	32.83	32.94	24.17	19.02	17.65	11.57	12.28	10.27
k, delay calibration	0.50	0.13	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.33	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.81	1.30	0.30	1.99	0.26	0.29	0.44	0.75	0.94	0.71	0.48	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.65	0.53	0.56	0.44	0.46	0.07	0.40	0.26	0.25	0.35	0.07
d, Delay for Lane Group [s/veh]	28.23	28.44	26.08	51.67	33.09	33.23	24.61	19.77	18.60	12.28	12.77	10.43
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.29	8.72	5.35	1.28	4.01	3.90	0.39	5.08	2.57	1.50	4.18	0.54
50th-Percentile Queue Length [ft/ln]	107.31	218.11	133.83	32.08	100.21	97.46	9.66	127.10	64.30	37.59	104.38	13.62
95th-Percentile Queue Length [veh/ln]	7.69	13.57	9.15	2.31	7.22	7.02	0.70	8.78	4.63	2.71	7.52	0.98
95th-Percentile Queue Length [ft/ln]	192.26	339.21	228.70	57.75	180.38	175.44	17.39	219.55	115.73	67.66	187.88	24.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.23	28.44	26.08	51.67	33.14	33.23	24.61	19.77	18.60	12.28	12.77	10.43
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	27.68			35.28			19.65			12.55		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	22.24											
Intersection LOS	C											
Intersection V/C	0.447											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 38.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.800

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
	90	810	80	40	520	30	20	190	160	50	140	40
Base Volume Input [veh/h]	90	810	80	40	520	30	20	190	160	50	140	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	810	80	40	520	30	20	190	160	50	140	40
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	213	21	12	154	9	5	50	43	14	38	11
Total Analysis Volume [veh/h]	95	854	84	47	616	36	21	202	170	55	153	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No
Maximum Recall	No	No		No	No			No				No
Pedestrian Recall	No	No		No	No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	54	54	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.54	0.54	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.10	0.25	0.25	0.06	0.17	0.17	0.25	0.12	0.53	0.03
s, saturation flow rate [veh/h]	938	1900	1815	753	1900	1850	894	1461	389	1508
c, Capacity [veh/h]	627	1022	977	493	996	969	283	399	152	411
d1, Uniform Delay [s]	7.56	14.24	14.30	8.11	13.69	13.72	31.01	29.92	33.15	27.23
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.28	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	1.53	1.64	0.38	0.89	0.93	11.86	0.27	203.18	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

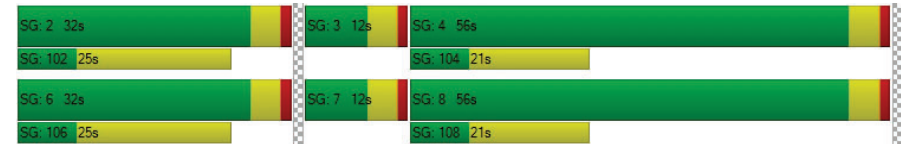
X, volume / capacity	0.15	0.47	0.47	0.10	0.33	0.33	0.79	0.43	1.37	0.11
d, Delay for Lane Group [s/veh]	7.67	15.76	15.95	8.49	14.58	14.64	42.87	30.19	236.33	27.28
Lane Group LOS	A	B	B	A	B	B	D	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.75	6.77	6.61	0.40	4.36	4.30	5.25	3.31	11.37	0.78
50th-Percentile Queue Length [ft/ln]	18.70	169.17	165.30	10.08	109.07	107.51	131.17	82.85	284.35	19.46
95th-Percentile Queue Length [veh/ln]	1.35	11.03	10.83	0.73	7.79	7.70	9.00	5.97	19.53	1.40
95th-Percentile Queue Length [ft/ln]	33.66	275.82	270.72	18.14	194.70	192.53	225.08	149.14	488.27	35.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.67	15.84	15.95	8.49	14.61	14.64	42.87	42.87	30.19	236.33	236.33	27.28
Movement LOS	A	B	B	A	B	B	D	D	C	F	F	C
d_A, Approach Delay [s/veh]	15.10			14.20			37.38			199.83		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	38.10											
Intersection LOS	D											
Intersection V/C	0.800											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.1
Level Of Service: C
Volume to Capacity (v/c): 0.568

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	100	840	150	120	630	40	50	420	170	120	380	110
Base Volume Input [veh/h]	100	840	150	120	630	40	50	420	170	120	380	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	840	150	120	630	40	50	420	170	120	380	110
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	216	39	32	167	11	14	117	47	33	105	30
Total Analysis Volume [veh/h]	103	864	154	127	666	42	56	467	189	132	419	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	55	43	43	55	43	43	25	25	25	36	36	36
g / C, Green / Cycle	0.55	0.43	0.43	0.55	0.43	0.43	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.27	0.28	0.16	0.19	0.19	0.06	0.18	0.20	0.12	0.22	0.08
s, saturation flow rate [veh/h]	930	1900	1767	778	1900	1844	967	1900	1595	1057	1900	1452
c, Capacity [veh/h]	518	820	763	409	824	800	114	470	394	344	688	526
d1, Uniform Delay [s]	11.93	22.28	22.46	14.23	19.75	19.80	48.35	34.59	35.24	24.03	26.09	22.18
k, delay calibration	0.16	0.50	0.50	0.50	0.50	0.50	0.04	0.09	0.13	0.23	0.10	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	3.76	4.27	1.97	1.66	1.74	1.20	1.85	4.42	1.51	0.81	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

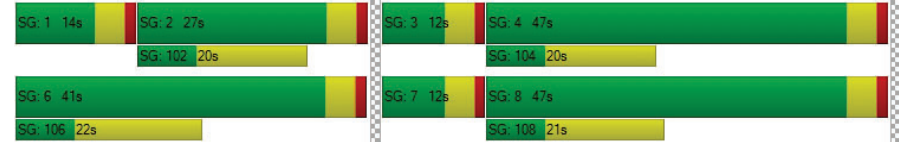
X, volume / capacity	0.20	0.64	0.65	0.31	0.43	0.44	0.49	0.73	0.79	0.38	0.61	0.23
d, Delay for Lane Group [s/veh]	12.20	26.05	26.73	16.20	21.42	21.54	49.55	36.44	39.66	25.54	26.90	22.26
Lane Group LOS	B	C	C	B	C	C	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.10	10.16	9.81	1.56	6.05	5.95	1.43	7.79	7.48	2.25	8.12	1.97
50th-Percentile Queue Length [ft/ln]	27.62	254.11	245.21	38.91	151.21	148.80	35.81	194.76	187.04	56.34	202.95	49.18
95th-Percentile Queue Length [veh/ln]	1.99	15.39	14.94	2.80	10.08	9.95	2.58	12.37	11.97	4.06	12.79	3.54
95th-Percentile Queue Length [ft/ln]	49.71	384.82	373.61	70.03	252.05	248.83	64.46	309.20	299.18	101.41	319.77	88.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.20	26.32	26.73	16.20	21.48	21.54	49.55	37.29	39.66	25.54	26.90	22.26
Movement LOS	B	C	C	B	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	25.08		20.68			38.88			25.80			
Approach LOS	C		C			D			C			
d_I, Intersection Delay [s/veh]	27.06											
Intersection LOS	C											
Intersection V/C	0.568											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 30.6
Level Of Service: C
Volume to Capacity (v/c): 0.584

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	130	950	180	30	810	40	60	250	150	100	280	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	950	180	30	810	40	60	250	150	100	280	80
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	258	49	8	220	11	16	65	39	27	76	22
Total Analysis Volume [veh/h]	141	1030	195	33	881	44	62	259	155	108	302	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	9	51	51	37	37	37	26	26	26	35	35
g / C, Green / Cycle	0.09	0.51	0.51	0.37	0.37	0.37	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.08	0.33	0.35	0.07	0.25	0.25	0.06	0.14	0.11	0.29	0.06
s, saturation flow rate [veh/h]	1810	1900	1700	462	1900	1835	1094	1900	1352	1394	1366
c, Capacity [veh/h]	172	978	875	115	711	687	72	488	347	488	482
d1, Uniform Delay [s]	44.42	17.55	18.15	44.38	25.96	26.12	50.00	31.97	31.19	29.00	22.33
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.68	3.22	4.30	6.23	4.69	5.10	10.27	0.33	0.34	15.96	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.64	0.68	0.29	0.66	0.67	0.86	0.53	0.45	0.84	0.18
d, Delay for Lane Group [s/veh]	48.10	20.77	22.45	50.62	30.66	31.22	60.26	32.30	31.52	44.96	22.40
Lane Group LOS	D	C	C	D	C	C	E	C	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.58	10.79	10.83	0.99	9.90	9.84	1.74	5.30	3.10	9.95	1.37
50th-Percentile Queue Length [ft/ln]	89.49	269.78	270.68	24.81	247.39	246.12	43.39	132.46	77.48	248.82	34.29
95th-Percentile Queue Length [veh/ln]	6.44	16.18	16.22	1.79	15.05	14.99	3.12	9.07	5.58	15.13	2.47
95th-Percentile Queue Length [ft/ln]	161.08	404.47	405.59	44.66	376.37	374.76	78.11	226.84	139.47	378.17	61.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.10	21.43	22.45	50.62	30.92	31.22	60.26	32.30	31.52	44.96	44.96	22.40
Movement LOS	D	C	C	D	C	C	E	C	C	D	D	C
d_A, Approach Delay [s/veh]	24.33		31.61			35.69			41.05			
Approach LOS	C		C			D			D			
d_I, Intersection Delay [s/veh]	30.60											
Intersection LOS	C											
Intersection V/C	0.584											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 53.2
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.521

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	130	1240	50	40	1020	20	6	80	110	66	150	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	1240	50	40	1020	20	6	80	110	66	150	50
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	327	13	10	266	5	2	24	32	18	42	14
Total Analysis Volume [veh/h]	137	1308	53	42	1063	21	7	95	130	70	169	56
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	9	32	32	5	28	28	40	40
g / C, Green / Cycle	0.09	0.35	0.35	0.05	0.31	0.31	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.36	0.36	0.02	0.29	0.29	0.13	0.12
s, saturation flow rate [veh/h]	1810	1900	1860	1810	1900	1878	1682	1808
c, Capacity [veh/h]	172	669	655	93	587	580	745	801
d1, Uniform Delay [s]	39.99	29.23	29.23	41.54	30.19	30.25	16.14	15.97
k, delay calibration	0.04	0.50	0.50	0.04	0.31	0.31	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	40.38	44.22	1.26	16.10	16.96	1.04	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

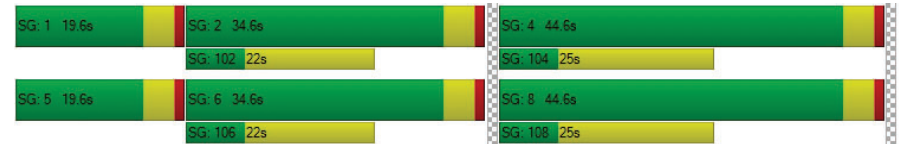
X, volume / capacity	0.80	1.02	1.03	0.45	0.93	0.93	0.30	0.28
d, Delay for Lane Group [s/veh]	43.19	69.61	73.45	42.80	46.29	47.21	17.18	16.84
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.08	21.28	21.53	0.93	13.61	13.67	3.08	3.03
50th-Percentile Queue Length [ft/ln]	77.12	532.01	538.23	23.24	340.35	341.78	77.05	75.76
95th-Percentile Queue Length [veh/ln]	5.55	29.29	29.82	1.67	19.67	19.74	5.55	5.46
95th-Percentile Queue Length [ft/ln]	138.82	732.16	745.40	41.84	491.63	493.38	138.68	136.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.19	71.44	73.45	42.80	46.74	47.21	0.00	17.18	17.18	0.00	16.84	16.84
Movement LOS	D	E	E	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	68.93			46.60			17.18			16.84		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	53.15											
Intersection LOS	D											
Intersection V/C	0.521											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 40.0
Level Of Service: D
Volume to Capacity (v/c): 0.698

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T						T T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	240	630	0	1190	70	0	0	0	0	650	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	240	630	0	1190	70	0	0	0	0	650	270	780
Peak Hour Factor	0.8705	0.8705	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9088	0.9088	0.9088
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	181	0	313	18	0	0	0	0	179	74	215
Total Analysis Volume [veh/h]	276	724	0	1253	74	0	0	0	0	715	297	858
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	72	48	48	38	38	38	38
g / C, Green / Cycle	0.17	0.60	0.40	0.40	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.15	0.20	0.24	0.24	0.27	0.26	0.30	0.30
s, saturation flow rate [veh/h]	1810	3618	3618	1840	1810	1855	1458	1572
c, Capacity [veh/h]	301	2187	1445	735	577	591	465	501
d1, Uniform Delay [s]	49.12	11.72	28.61	28.46	37.91	37.62	39.51	39.78
k, delay calibration	0.25	0.50	0.50	0.50	0.26	0.25	0.34	0.35
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.06	0.41	1.94	3.63	7.55	6.31	20.80	22.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.33	0.61	0.60	0.84	0.82	0.93	0.94
d, Delay for Lane Group [s/veh]	70.18	12.13	30.55	32.09	45.46	43.94	60.31	62.24
Lane Group LOS	E	B	C	C	D	D	E	E
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.86	4.79	10.43	10.72	13.77	13.55	14.41	16.06
50th-Percentile Queue Length [ft/ln]	246.59	119.65	260.65	268.07	344.1	338.6	360.1	401.4
95th-Percentile Queue Length [veh/ln]	15.01	8.37	15.72	16.09	19.85	19.58	20.63	22.63
95th-Percentile Queue Length [ft/ln]	375.36	209.35	393.04	402.33	496.2	489.5	515.7	565.8

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.18	12.13	0.00	0.00	31.00	32.09	0.00	0.00	0.00	44.93	46.50	61.41
Movement LOS	E	B			C	C				D	D	E
d_A, Approach Delay [s/veh]	28.15		31.06		0.00		52.74					
Approach LOS	C		C		A		D					
d_I, Intersection Delay [s/veh]	40.03											
Intersection LOS	D											
Intersection V/C	0.698											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 29.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.550

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	810	260	540	1240	0	110	170	250	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	810	260	540	1240	0	110	170	250	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	225	72	145	333	0	32	49	72	0	0	0
Total Analysis Volume [veh/h]	0	899	288	580	1331	0	126	195	287	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	26	26	26	56	87	24	24	24
g / C, Green / Cycle	0.22	0.22	0.22	0.47	0.73	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.17	0.19	0.20	0.17	0.37	0.09	0.09	0.18
s, saturation flow rate [veh/h]	3618	1553	1454	3514	3618	1830	1729	1577
c, Capacity [veh/h]	797	342	320	1644	2628	360	340	310
d1, Uniform Delay [s]	43.70	45.18	45.47	20.34	7.10	42.53	42.51	47.29
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.20
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	2.84	3.73	0.60	0.70	0.34	0.36	18.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.88	0.90	0.35	0.51	0.46	0.46	0.92
d, Delay for Lane Group [s/veh]	44.25	48.02	49.20	20.93	7.80	42.87	42.86	65.40
Lane Group LOS	D	D	D	C	A	D	D	E
Critical Lane Group	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.27	8.76	8.55	5.30	6.82	4.34	4.08	9.86
50th-Percentile Queue Length [ft/ln]	206.87	219.05	213.64	132.40	170.51	108.42	101.88	246.49
95th-Percentile Queue Length [veh/ln]	12.99	13.62	13.34	9.07	11.10	7.75	7.34	15.01
95th-Percentile Queue Length [ft/ln]	324.81	340.41	333.50	226.76	277.59	193.80	183.38	375.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	44.70	49.20	20.93	7.80	0.00	42.87	42.86	65.40	0.00	0.00	0.00
Movement LOS		D	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]		46.40		11.79			53.50			0.00		
Approach LOS		D		B			D			A		
d_I, Intersection Delay [s/veh]		29.72										
Intersection LOS		C										
Intersection V/C		0.550										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 36.7
 Level Of Service: D
 Volume to Capacity (v/c): 0.552

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	710	260	90	780	110	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	710	260	90	780	110	180
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	198	73	28	245	32	52
Total Analysis Volume [veh/h]	792	290	113	978	126	207
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.22	0.21	0.17	0.27	0.15	0.28
s, saturation flow rate [veh/h]	3618	1353	684	3618	832	734
c, Capacity [veh/h]	2509	938	472	2509	145	128
d1, Uniform Delay [s]	6.01	5.98	10.31	6.44	40.14	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.38
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.86	1.19	0.46	5.92	302.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.31	0.24	0.39	0.87	1.62
d, Delay for Lane Group [s/veh]	6.34	6.84	11.51	6.90	46.06	343.47
Lane Group LOS	A	A	B	A	D	F
Critical Lane Group	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.97	2.30	1.33	3.93	3.18	13.84
50th-Percentile Queue Length [ft/ln]	74.15	57.47	33.14	98.19	79.56	345.90
95th-Percentile Queue Length [veh/ln]	5.34	4.14	2.39	7.07	5.73	23.65
95th-Percentile Queue Length [ft/ln]	133.46	103.44	59.65	176.74	143.21	591.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.34	6.84	11.51	6.90	46.06	343.47
Movement LOS	A	A	B	A	D	F
d_A, Approach Delay [s/veh]	6.48		7.37		230.94	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	36.69					
Intersection LOS	D					
Intersection V/C	0.552					

Sequence

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



Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.4
Level Of Service: C
Volume to Capacity (v/c): 0.378

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	40	200	130	110	260	10	50	150	60	90	120	20
Base Volume Input [veh/h]	40	200	130	110	260	10	50	150	60	90	120	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	200	130	110	260	10	50	150	60	90	120	20
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	56	37	31	73	3	13	39	16	26	35	6
Total Analysis Volume [veh/h]	45	225	146	124	292	11	52	157	63	105	141	23
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	48	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.54	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.22	0.11	0.16	0.05	0.13	0.09	0.10
s, saturation flow rate [veh/h]	1170	1690	1128	1877	1025	1723	1150	1716
c, Capacity [veh/h]	751	884	688	1007	159	315	131	314
d1, Uniform Delay [s]	6.87	13.13	7.69	11.54	40.43	34.49	44.13	33.27
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	1.46	0.57	0.77	0.44	1.05	4.34	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

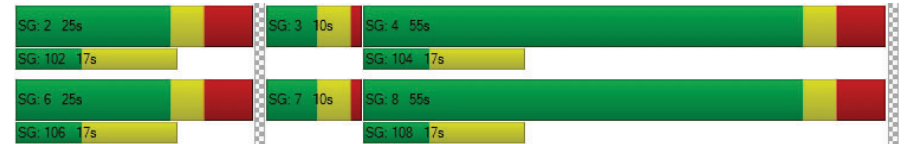
X, volume / capacity	0.06	0.42	0.18	0.30	0.33	0.70	0.80	0.52
d, Delay for Lane Group [s/veh]	6.88	14.59	8.26	12.31	40.87	35.54	48.46	33.77
Lane Group LOS	A	B	A	B	D	D	D	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.29	4.56	0.97	3.36	1.13	4.52	2.46	3.19
50th-Percentile Queue Length [ft/ln]	7.26	113.91	24.25	83.90	28.17	113.07	61.45	79.71
95th-Percentile Queue Length [veh/ln]	0.52	8.06	1.75	6.04	2.03	8.01	4.42	5.74
95th-Percentile Queue Length [ft/ln]	13.07	201.42	43.66	151.02	50.71	200.26	110.61	143.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.88	14.59	14.59	8.26	12.31	12.31	40.87	35.54	35.54	48.46	33.77	33.77
Movement LOS	A	B	B	A	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	13.76			11.14			36.56			39.51		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.43											
Intersection LOS	C											
Intersection V/C	0.378											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 14.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.548

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Northbound				Southbound				Eastbound				Westbound				
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Base Volume Input [veh/h]	40	0	890	80	180	1400	0	32	1085	209	80	0	90	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	0	890	80	180	1400	0	32	1085	209	80	0	90	0	0	0	0
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	239	21	50	386	0	8	271	52	25	0	28	0	0	0	0
Total Analysis Volume [veh/h]	40	0	955	86	198	1544	0	32	1085	209	100	0	112	0	0	0	0
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	107	107	117	108	23	23
g / C, Green / Cycle	0.03	0.71	0.71	0.78	0.72	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.26	0.05	0.29	0.43	0.08	0.10
s, saturation flow rate [veh/h]	1810	3618	1585	688	3618	1231	1132
c, Capacity [veh/h]	52	2570	1126	546	2615	192	177
d1, Uniform Delay [s]	72.29	8.54	6.65	5.30	10.03	58.07	59.21
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.52	0.41	0.13	1.87	0.99	0.81	1.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

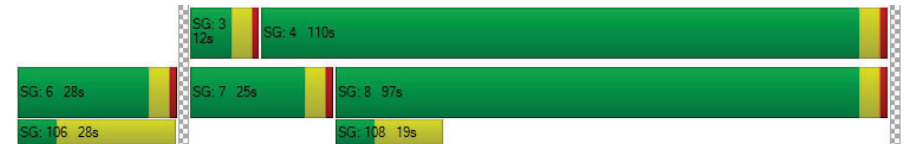
X, volume / capacity	0.77	0.37	0.08	0.36	0.59	0.52	0.63
d, Delay for Lane Group [s/veh]	80.81	8.95	6.78	7.17	11.02	58.88	60.61
Lane Group LOS	F	A	A	A	B	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.66	6.09	0.87	1.66	12.01	3.55	4.08
50th-Percentile Queue Length [ft/ln]	41.50	152.37	21.87	41.38	300.16	88.87	101.98
95th-Percentile Queue Length [veh/ln]	2.99	10.14	1.57	2.98	17.69	6.40	7.34
95th-Percentile Queue Length [ft/ln]	74.70	253.59	39.37	74.49	442.23	159.97	183.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.81	0.00	8.95	6.78	7.17	11.02	0.00	0.00	0.00	0.00	58.88	0.00	60.61
Movement LOS	F		A	A	A	B					E		E
d_A, Approach Delay [s/veh]	11.44		10.58		0.00		59.80						
Approach LOS	B		B		A		E						
d_I, Intersection Delay [s/veh]	14.33												
Intersection LOS	B												
Intersection V/C	0.548												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 87.6
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.203

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	2010	2	360	2530	20	20	30	30	150	20	340	340
Base Volume Input [veh/h]	40	2010	2	360	2530	20	20	30	30	150	20	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	2010	2	360	2530	20	20	30	30	150	20	340
Peak Hour Factor	0.8617	0.8617	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	583	1	92	647	5	8	12	12	45	6	102
Total Analysis Volume [veh/h]	46	2333	2	368	2588	20	32	48	48	181	24	409
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk		No			No			No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes		No	Yes			No			No	No	
Maximum Recall	No	No		No	No			No			No	No	
Pedestrian Recall	No	No		No	No			No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	328	328	328	328	328	328	328	328
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	10	200	69	258	258	45	45	118
g / C, Green / Cycle	0.03	0.61	0.21	0.79	0.79	0.14	0.14	0.36
(v / s)_i Volume / Saturation Flow Rate	0.03	0.45	0.20	0.47	0.47	0.55	0.40	0.25
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1893	233	512	1615
c, Capacity [veh/h]	56	3152	378	2845	1488	46	91	580
d1, Uniform Delay [s]	157.86	45.64	128.77	14.18	14.23	134.60	146.58	90.19
k, delay calibration	0.04	0.04	0.43	0.04	0.28	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.63	0.13	36.73	0.08	1.03	867.32	597.52	7.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.74	0.97	0.60	0.60	2.80	2.25	0.71
d, Delay for Lane Group [s/veh]	168.49	45.77	165.49	14.26	15.26	1001.92	744.10	97.25
Lane Group LOS	F	D	F	B	B	F	F	F
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.16	45.42	35.49	25.78	27.57	15.04	23.14	31.65
50th-Percentile Queue Length [ft/ln]	104.05	1135.41	887.26	644.59	689.30	376.10	578.62	791.35
95th-Percentile Queue Length [veh/ln]	7.49	56.47	45.26	34.11	36.18	26.54	38.49	40.88
95th-Percentile Queue Length [ft/ln]	187.29	1411.72	1131.52	852.77	904.59	663.46	962.31	1022.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	168.49	45.77	0.00	165.49	14.60	15.26	1001.92	1001.92	1001.92	744.10	744.10	97.25
Movement LOS	F	D		F	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	48.15		33.26			1001.92			313.22			
Approach LOS	D		C			F			F			
d_I, Intersection Delay [s/veh]	87.60											
Intersection LOS	F											
Intersection V/C	1.203											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 148.8
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.252

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration	T T			T T			T T			T T			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Base Volume Input [veh/h]	310	410	120	40	460	100	70	130	220	0	30	140	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	310	410	120	40	460	100	70	130	220	0	30	140	70
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	109	32	11	132	29	19	36	60	0	9	44	22
Total Analysis Volume [veh/h]	330	437	128	46	526	114	77	142	241	0	38	176	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	60	60	4	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.60	0.60	0.04	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.10	0.03	0.28	0.08	0.79	0.16	0.37	0.10
s, saturation flow rate [veh/h]	1810	1900	1264	1810	1900	1352	276	1518	583	860
c, Capacity [veh/h]	189	1142	760	65	1012	720	100	570	150	159
d1, Uniform Delay [s]	44.75	10.32	8.85	47.68	15.10	11.93	41.40	23.17	38.86	36.98
k, delay calibration	0.36	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	351.13	0.97	0.48	5.28	1.91	0.47	568.90	0.19	225.07	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

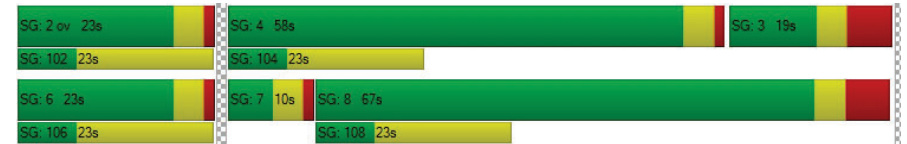
X, volume / capacity	1.75	0.38	0.17	0.71	0.52	0.16	2.19	0.42	1.42	0.55
d, Delay for Lane Group [s/veh]	395.89	11.30	9.33	52.96	17.01	12.40	610.29	23.35	263.93	38.09
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	23.07	4.95	1.27	1.22	7.87	1.35	18.28	4.24	13.10	1.96
50th-Percentile Queue Length [ft/ln]	576.73	123.79	31.66	30.56	196.68	33.72	456.88	106.05	327.45	49.11
95th-Percentile Queue Length [veh/ln]	36.68	8.60	2.28	2.20	12.47	2.43	31.71	7.62	21.93	3.54
95th-Percentile Queue Length [ft/ln]	916.89	215.03	56.99	55.01	311.67	60.69	792.67	190.49	548.29	88.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	395.89	11.30	9.33	52.96	17.01	12.40	610.29	610.29	23.35	263.9	263.9	263.9	38.09
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	152.82			18.66			302.79			198.12			
Approach LOS	F			B			F			F			
d_I, Intersection Delay [s/veh]	148.82												
Intersection LOS	F												
Intersection V/C	1.252												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.398

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	520	180	210	590	260	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	520	180	210	590	260	300
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	49	55	156	75	86
Total Analysis Volume [veh/h]	563	195	222	622	299	345
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.16	0.14	0.22	0.17	0.17	0.13	0.19
s, saturation flow rate [veh/h]	3618	1370	992	3618	1299	1676	1064
c, Capacity [veh/h]	2089	791	727	2509	226	292	186
d1, Uniform Delay [s]	10.57	10.40	5.79	5.67	41.27	39.01	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.16	0.04	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	0.74	1.09	0.24	34.85	1.29	75.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

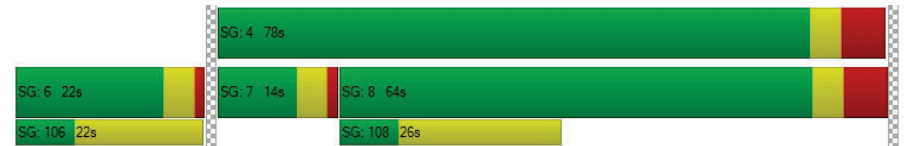
X, volume / capacity	0.27	0.25	0.31	0.25	1.00	0.73	1.10
d, Delay for Lane Group [s/veh]	10.88	11.14	6.88	5.90	76.13	40.30	116.60
Lane Group LOS	B	B	A	A	F	D	F
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.04	2.17	1.64	2.19	7.69	4.97	8.39
50th-Percentile Queue Length [ft/ln]	75.99	54.33	41.03	54.83	192.31	124.25	209.73
95th-Percentile Queue Length [veh/ln]	5.47	3.91	2.95	3.95	12.26	8.63	13.74
95th-Percentile Queue Length [ft/ln]	136.78	97.80	73.86	98.69	306.45	215.66	343.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.88	11.14	6.88	5.90	66.51	87.17
Movement LOS	B	B	A	A	E	F
d_A, Approach Delay [s/veh]	10.95		6.16		77.21	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	28.15					
Intersection LOS	C					
Intersection V/C	0.398					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 13.1
Level Of Service: B
Volume to Capacity (v/c): 0.356

Intersection Setup

Name	Ocean Ave		Ocean Ave			Arizona Ave		
Approach	Northbound		Southbound			Westbound		
Lane Configuration								
Turning Movement	Thru	Right	U-turn	Left	Thru	U-turn	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00			35.00		
Grade [%]	0.00		0.00			0.00		
Crosswalk	Yes		Yes			Yes		

Volumes

Name	Ocean Ave		Ocean Ave			Arizona Ave		
Base Volume Input [veh/h]	570	150	0	130	690	0	100	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	570	150	0	130	690	0	100	120
Peak Hour Factor	0.9093	0.9093	1.0000	0.9413	0.9413	1.0000	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	41	0	35	183	0	30	35
Total Analysis Volume [veh/h]	627	165	0	138	733	0	118	142
Presence of On-Street Parking	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389			253		
Bicycle Volume [bicycles/h]	6		7			22		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	4	4	0	6	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	Lag	-	-	Lag	-
Minimum Green [s]	7	7	0	7	7	0	7	7
Maximum Green [s]	30	30	0	30	30	0	25	25
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	5.0	5.0	0.0	5.0	5.0	0.0	1.0	1.0
Split [s]	69	69	0	69	69	0	31	31
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	7	7	0	0	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	0	0	18	18
Rest in Walk	No				No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	0.0	6.6	6.6	0.0	2.6	2.6
Minimum Recall	Yes				Yes		No	
Maximum Recall	No				No		No	
Pedestrian Recall	No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.17	0.12	0.17	0.20	0.15
s, saturation flow rate [veh/h]	3618	1339	795	3618	1698
c, Capacity [veh/h]	2235	827	481	2235	424
d1, Uniform Delay [s]	8.82	8.32	14.27	9.14	33.18
k, delay calibration	0.50	0.50	0.50	0.50	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.54	1.50	0.39	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.20	0.29	0.33	0.61
d, Delay for Lane Group [s/veh]	9.13	8.86	15.77	9.54	34.05
Lane Group LOS	A	A	B	A	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.02	1.58	1.97	3.67	5.54
50th-Percentile Queue Length [ft/ln]	75.59	39.42	49.25	91.71	138.55
95th-Percentile Queue Length [veh/ln]	5.44	2.84	3.55	6.60	9.40
95th-Percentile Queue Length [ft/ln]	136.06	70.95	88.65	165.08	235.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.13	8.86	15.77	15.77	9.54	34.05	34.05	34.05
Movement LOS	A	A	B	B	A	C	C	C
d_A, Approach Delay [s/veh]	9.07		10.52		34.05			
Approach LOS	A		B		C			
d_I, Intersection Delay [s/veh]	13.11							
Intersection LOS	B							
Intersection V/C	0.356							

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.482

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	550	240	150	640	180	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	550	240	150	640	180	150
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	155	68	43	183	50	41
Total Analysis Volume [veh/h]	620	271	171	731	198	165
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.17	0.21	0.18	0.20	0.24	0.13
s, saturation flow rate [veh/h]	3618	1296	951	3618	832	1238
c, Capacity [veh/h]	2190	785	731	2618	120	325
d1, Uniform Delay [s]	9.40	9.84	4.62	4.78	42.78	31.36
k, delay calibration	0.50	0.50	0.50	0.50	0.37	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	1.21	0.75	0.27	318.17	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.35	0.23	0.28	1.65	0.51
d, Delay for Lane Group [s/veh]	9.72	11.05	5.37	5.05	360.95	31.81
Lane Group LOS	A	B	A	A	F	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.13	3.04	1.06	2.29	13.54	3.39
50th-Percentile Queue Length [ft/ln]	78.16	75.89	26.40	57.22	338.55	84.69
95th-Percentile Queue Length [veh/ln]	5.63	5.46	1.90	4.12	23.09	6.10
95th-Percentile Queue Length [ft/ln]	140.68	136.61	47.52	102.99	577.18	152.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.72	11.05	5.37	5.05	360.95	31.81
Movement LOS	A	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.12		5.11		211.34	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	41.91					
Intersection LOS	D					
Intersection V/C	0.482					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	35.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	10	800	142	67	840	20	20	13	70	190	10	170
Base Volume Input [veh/h]	10	800	142	67	840	20	20	13	70	190	10	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	800	142	67	840	20	20	13	70	190	10	170
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	224	41	18	221	5	6	6	21	53	3	48
Total Analysis Volume [veh/h]	11	897	165	71	882	21	23	24	82	213	11	191
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	80	80	74	74	11	24	24
g / C, Green / Cycle	0.53	0.53	0.49	0.49	0.08	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.25	0.24	0.24	0.06	0.12	0.14
s, saturation flow rate [veh/h]	693	3618	1900	1881	1654	1814	1325
c, Capacity [veh/h]	339	1934	934	924	124	287	209
d1, Uniform Delay [s]	18.41	21.59	25.44	25.52	68.48	60.65	62.11
k, delay calibration	0.04	0.50	0.50	0.50	0.08	0.07	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.80	1.79	1.84	10.64	2.96	18.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

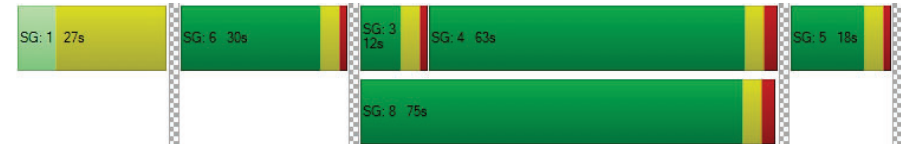
X, volume / capacity	0.03	0.46	0.48	0.49	0.84	0.78	0.91
d, Delay for Lane Group [s/veh]	18.42	22.39	27.23	27.36	79.11	63.60	80.35
Lane Group LOS	B	C	C	C	E	E	F
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.18	10.06	11.30	11.34	4.34	8.52	8.30
50th-Percentile Queue Length [ft/ln]	4.60	251.41	282.50	283.56	108.45	213.00	207.38
95th-Percentile Queue Length [veh/ln]	0.33	15.26	16.81	16.87	7.75	13.31	13.02
95th-Percentile Queue Length [ft/ln]	8.28	381.42	420.33	421.65	193.85	332.67	325.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.42	22.39	0.00	0.00	27.30	27.36	79.11	0.00	79.11	63.60	63.60	80.35
Movement LOS	B	C			C	C	E		E	E	E	F
d_A, Approach Delay [s/veh]	22.35		27.30			79.11		71.31				
Approach LOS	C		C			E		E				
d_I, Intersection Delay [s/veh]	35.54											
Intersection LOS	D											
Intersection V/C	0.456											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 24.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.455

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	400	670	800	170	130	570
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	400	670	800	170	130	570
Peak Hour Factor	0.9529	0.9529	0.9745	0.9745	0.9595	0.9595
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	176	205	44	34	149
Total Analysis Volume [veh/h]	420	703	821	174	135	594
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	75	75	75	15	36
g / C, Green / Cycle	0.14	0.62	0.62	0.62	0.12	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.19	0.23	0.13	0.11	0.21
s, saturation flow rate [veh/h]	3514	3618	3618	1331	1240	2859
c, Capacity [veh/h]	485	2258	2258	831	152	855
d1, Uniform Delay [s]	50.59	10.51	10.96	9.75	51.78	37.17
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.86	0.36	0.45	0.57	6.60	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

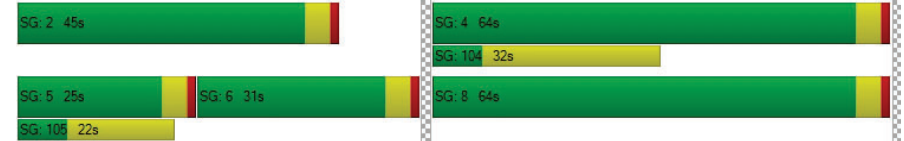
X, volume / capacity	0.87	0.31	0.36	0.21	0.89	0.69
d, Delay for Lane Group [s/veh]	52.45	10.87	11.41	10.32	58.38	37.56
Lane Group LOS	D	B	B	B	E	D
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.29	4.32	5.26	2.06	4.47	8.22
50th-Percentile Queue Length [ft/ln]	157.18	108.01	131.59	51.56	111.84	205.53
95th-Percentile Queue Length [veh/ln]	10.40	7.73	9.03	3.71	7.94	12.92
95th-Percentile Queue Length [ft/ln]	259.99	193.23	225.66	92.81	198.56	323.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.45	10.87	11.41	10.32	58.38	37.56
Movement LOS	D	B	B	B	E	D
d_A, Approach Delay [s/veh]	26.42		11.22		41.41	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	24.95					
Intersection LOS	C					
Intersection V/C	0.455					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 29.8
Level Of Service: C
Volume to Capacity (v/c): 0.484

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	70	160	70	3	270	98	290	280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	70	160	70	3	270	98	290	280
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319	
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	23	53	23	1	71	26	78	75
Total Analysis Volume [veh/h]	0	0	0	0	93	212	93	3	285	103	311	300
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	6				70				188			
Bicycle Volume [bicycles/h]	33				8				56			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk					No						No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall					Yes				Yes		Yes	
Maximum Recall					No				No		No	
Pedestrian Recall					No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	52	52	52	64	64	64
g / C, Green / Cycle	0.44	0.44	0.44	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.08	0.10	0.24	0.16	0.20
s, saturation flow rate [veh/h]	1058	1900	1501	1203	1900	1464
c, Capacity [veh/h]	407	830	656	667	1020	786
d1, Uniform Delay [s]	29.74	20.74	21.09	15.77	15.38	16.18
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.31	0.51	0.79	2.00	0.77	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.19	0.22	0.43	0.30	0.38
d, Delay for Lane Group [s/veh]	31.05	21.25	21.88	17.77	16.15	17.59
Lane Group LOS	C	C	C	B	B	B
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.12	2.81	2.70	4.54	4.80	4.96
50th-Percentile Queue Length [ft/ln]	52.89	70.31	67.47	113.46	120.03	123.92
95th-Percentile Queue Length [veh/ln]	3.81	5.06	4.86	8.03	8.39	8.61
95th-Percentile Queue Length [ft/ln]	95.20	126.55	121.44	200.81	209.86	215.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	31.05	21.41	21.88	0.00	17.77	0.00	16.15	17.59
Movement LOS					C	C	C		B		B	B
d_A, Approach Delay [s/veh]	0.00				23.77				17.15			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	29.83											
Intersection LOS	C											
Intersection V/C	0.484											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	610	230	160	770	65	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	610	230	160	770	65	130
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	162	61	44	214	17	34
Total Analysis Volume [veh/h]	1	53	647	244	177	854	69	135
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	46	46	46
g / C, Green / Cycle	0.26	0.26	0.26	0.39	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.20	0.16	0.27	0.28
s, saturation flow rate [veh/h]	578	3618	1246	1074	1900	1730
c, Capacity [veh/h]	65	955	329	376	734	668
d1, Uniform Delay [s]	59.93	39.57	40.40	27.05	30.78	31.33
k, delay calibration	0.04	0.04	0.04	0.04	0.08	0.16
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.68	0.32	1.25	0.34	0.91	2.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

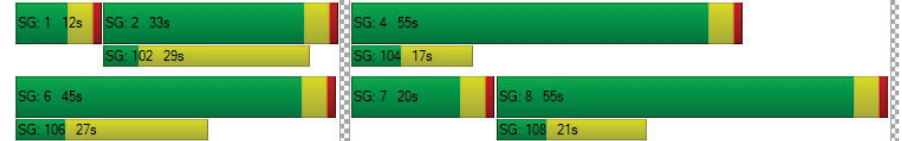
X, volume / capacity	0.81	0.68	0.74	0.47	0.69	0.72
d, Delay for Lane Group [s/veh]	68.61	39.89	41.65	27.39	31.69	33.56
Lane Group LOS	E	D	D	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.77	8.57	6.68	3.48	12.30	12.19
50th-Percentile Queue Length [ft/ln]	44.27	214.17	166.98	87.05	307.50	304.68
95th-Percentile Queue Length [veh/ln]	3.19	13.37	10.92	6.27	18.05	17.91
95th-Percentile Queue Length [ft/ln]	79.69	334.18	272.94	156.69	451.29	447.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	68.61	39.89	41.65	27.39	32.45	0.00	33.56
Movement LOS		E	D	D	C	C		C
d_A, Approach Delay [s/veh]	41.96			31.81				
Approach LOS	D			C				
d_I, Intersection Delay [s/veh]	29.83							
Intersection LOS	C							
Intersection V/C	0.484							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 132.0
 Level Of Service: F
 Volume to Capacity (v/c): 0.762

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	80	110	220	0	50	70	70	0	40	250	60	0	170	430	70
Base Volume Input [veh/h]	0	80	110	220	0	50	70	70	0	40	250	60	0	170	430	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	80	110	220	0	50	70	70	0	40	250	60	0	170	430	70
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	1.000	0.868	0.868	0.868	1.000	0.968	0.968	0.968
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	21	29	59	0	14	19	19	0	12	72	17	0	44	111	18
Total Analysis Volume [veh/h]	0	85	117	234	0	54	76	76	0	46	288	69	0	176	444	72
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.21	0.60	0.05	0.08	0.04	0.16	0.14	0.14
s, saturation flow rate [veh/h]	1255	1665	341	899	3618	1577	1108	1900	1790
c, Capacity [veh/h]	73	258	95	396	1709	745	518	898	846
d1, Uniform Delay [s]	50.02	42.26	43.24	21.55	15.12	14.55	21.25	16.16	16.20
k, delay calibration	0.04	0.16	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	85.53	169.65	559.42	0.60	0.21	0.25	1.78	0.83	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.16	1.36	2.17	0.12	0.17	0.09	0.34	0.29	0.30
d, Delay for Lane Group [s/veh]	135.54	211.91	602.67	22.15	15.34	14.80	23.03	16.99	17.10
Lane Group LOS	F	F	F	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.54	18.40	17.10	0.79	1.89	0.90	3.12	3.81	3.66
50th-Percentile Queue Length [ft/ln]	88.47	459.88	427.42	19.65	47.23	22.47	78.09	95.19	91.52
95th-Percentile Queue Length [veh/ln]	6.37	28.87	29.39	1.41	3.40	1.62	5.62	6.85	6.59
95th-Percentile Queue Length [ft/ln]	159.25	721.74	734.78	35.37	85.01	40.45	140.56	171.33	164.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	135.5	135.5	211.9	211.9	602.6	602.6	602.6	602.6	22.15	22.15	15.34	14.80	23.03	23.03	17.04	17.10
Movement LOS	F	F	F	F	F	F	F	F	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	197.02				602.67				16.02				18.57			
Approach LOS	F				F				B				B			
d_I, Intersection Delay [s/veh]	132.04															
Intersection LOS	F															
Intersection V/C	0.762															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 29.2
Level Of Service: C
Volume to Capacity (v/c): 0.364

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	90	230	130	40	110	30	50	90	60	70	70	90
Base Volume Input [veh/h]	90	230	130	40	110	30	50	90	60	70	70	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	230	130	40	110	30	50	90	60	70	70	90
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	61	34	12	33	9	15	28	18	20	20	26
Total Analysis Volume [veh/h]	95	243	137	47	130	35	62	111	74	79	79	102
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	16	16	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	21	21	21	21	21	49	49
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.21	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.08	0.13	0.09	0.04	0.09	0.16	0.24
s, saturation flow rate [veh/h]	1240	1900	1539	1155	1807	1543	1100
c, Capacity [veh/h]	196	392	318	144	373	804	588
d1, Uniform Delay [s]	43.87	36.12	34.57	45.78	34.66	15.07	16.93
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	0.60	0.34	0.48	0.31	0.99	2.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

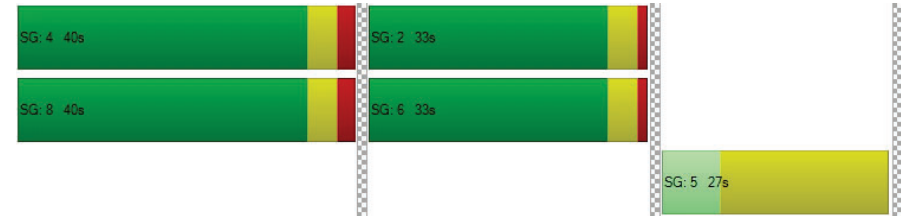
X, volume / capacity	0.49	0.62	0.43	0.33	0.44	0.31	0.44
d, Delay for Lane Group [s/veh]	44.56	36.71	34.92	46.27	34.97	16.06	19.33
Lane Group LOS	D	D	C	D	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.29	5.34	2.88	1.14	3.47	3.39	4.22
50th-Percentile Queue Length [ft/ln]	57.27	133.58	71.98	28.57	86.78	84.68	105.42
95th-Percentile Queue Length [veh/ln]	4.12	9.13	5.18	2.06	6.25	6.10	7.58
95th-Percentile Queue Length [ft/ln]	103.08	228.35	129.56	51.42	156.21	152.43	189.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.56	36.71	34.92	46.27	34.97	34.97	16.06	16.06	16.06	19.33	19.33	19.33
Movement LOS	D	D	C	D	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	37.77			37.47			16.06			19.33		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	29.21											
Intersection LOS	C											
Intersection V/C	0.364											

Sequence

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



Intersection Level Of Service Report

Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 85.6
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.088

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	70	260	190	60	150	50	40	230	100	80	170	190
Base Volume Input [veh/h]	70	260	190	60	150	50	40	230	100	80	170	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	260	190	60	150	50	40	230	100	80	170	190
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	73	53	17	42	14	11	62	27	23	49	55
Total Analysis Volume [veh/h]	79	293	214	67	167	56	43	249	108	92	195	218
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.07	0.15	0.27	0.06	0.12	0.51	0.07	0.82	0.14
s, saturation flow rate [veh/h]	1176	1900	800	1103	1792	573	1570	350	1581
c, Capacity [veh/h]	145	370	156	105	349	330	789	224	795
d1, Uniform Delay [s]	47.10	38.33	40.25	49.24	37.02	21.68	13.27	31.33	14.33
k, delay calibration	0.04	0.08	0.44	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.18	2.74	200.17	2.40	0.73	27.58	0.36	157.39	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

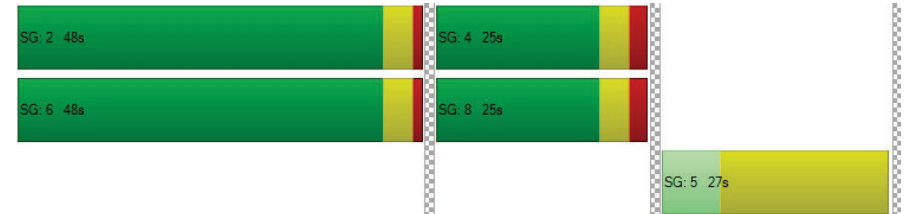
X, volume / capacity	0.54	0.79	1.37	0.64	0.64	0.89	0.14	1.28	0.27
d, Delay for Lane Group [s/veh]	48.28	41.07	240.42	51.64	37.75	49.26	13.63	188.71	15.19
Lane Group LOS	D	D	F	D	D	D	B	F	B
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.99	6.96	12.38	1.72	4.98	6.29	1.34	15.33	2.95
50th-Percentile Queue Length [ft/ln]	49.76	173.88	309.42	43.05	124.43	157.22	33.61	383.34	73.66
95th-Percentile Queue Length [veh/ln]	3.58	11.28	20.72	3.10	8.64	10.40	2.42	25.34	5.30
95th-Percentile Queue Length [ft/ln]	89.57	282.00	517.89	77.49	215.89	260.04	60.49	633.39	132.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.28	41.07	240.42	51.64	37.75	37.75	49.26	49.26	13.63	188.71	188.71	15.19
Movement LOS	D	D	F	D	D	D	D	D	B	F	F	B
d_A, Approach Delay [s/veh]	114.84			40.96			39.64			113.80		
Approach LOS	F			D			D			F		
d_I, Intersection Delay [s/veh]	85.63											
Intersection LOS	F											
Intersection V/C	1.088											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.9
Level Of Service: C
Volume to Capacity (v/c): 0.350

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	80	200	200	90	200	40	70	210	110	120	200	200
Base Volume Input [veh/h]	80	200	200	90	200	40	70	210	110	120	200	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	200	200	90	200	40	70	210	110	120	200	200
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	59	59	24	53	11	18	55	29	35	58	58
Total Analysis Volume [veh/h]	95	237	237	96	214	43	73	220	115	139	231	231
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.16	0.08	0.14	0.06	0.19	0.13	0.12	0.15
s, saturation flow rate [veh/h]	1140	1900	1472	1161	1833	1168	1769	1062	1900	1559
c, Capacity [veh/h]	185	460	357	205	444	463	770	370	827	679
d1, Uniform Delay [s]	44.30	32.80	34.22	42.77	33.39	23.62	19.68	29.77	18.16	18.73
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	0.33	0.80	0.62	0.45	0.73	1.79	2.90	0.84	1.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

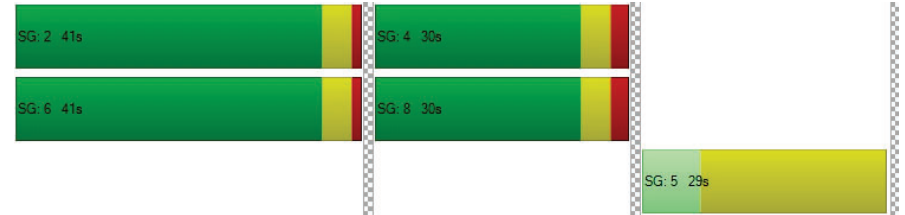
X, volume / capacity	0.51	0.51	0.66	0.47	0.58	0.16	0.44	0.38	0.28	0.34
d, Delay for Lane Group [s/veh]	45.13	33.13	35.01	43.39	33.83	24.35	21.47	32.67	19.00	20.09
Lane Group LOS	D	C	D	D	C	C	C	C	B	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.31	4.89	5.14	2.28	5.41	1.29	5.59	3.00	3.51	3.67
50th-Percentile Queue Length [ft/ln]	57.80	122.32	128.48	57.06	135.23	32.30	139.69	74.96	87.64	91.81
95th-Percentile Queue Length [veh/ln]	4.16	8.52	8.86	4.11	9.22	2.33	9.46	5.40	6.31	6.61
95th-Percentile Queue Length [ft/ln]	104.04	213.01	221.43	102.70	230.58	58.14	236.61	134.94	157.75	165.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.13	33.13	35.01	43.39	33.83	33.83	24.35	21.47	21.47	32.67	19.00	20.09
Movement LOS	D	C	D	D	C	C	C	C	C	C	B	C
d_A, Approach Delay [s/veh]	35.92		36.43			21.98			22.58			
Approach LOS	D		D			C			C			
d_I, Intersection Delay [s/veh]	28.92											
Intersection LOS	C											
Intersection V/C	0.350											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 35.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.374

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	50	350	0	29	340	130	66	90	0	120	230
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	350	0	29	340	130	66	90	0	120	230	180
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	94	0	8	91	35	20	27	0	32	61	48
Total Analysis Volume [veh/h]	54	376	0	31	365	140	79	108	0	128	244	191
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	32	58	58
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.20	0.10	0.16	0.17
s, saturation flow rate [veh/h]	1013	1863	1863	1397	1861	1487
c, Capacity [veh/h]	130	500	500	375	907	725
d1, Uniform Delay [s]	54.91	40.18	39.89	35.65	18.85	19.02
k, delay calibration	0.04	0.17	0.34	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	3.50	6.20	0.23	1.01	1.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.75	0.73	0.37	0.34	0.35
d, Delay for Lane Group [s/veh]	55.70	43.69	46.09	35.87	19.86	20.38
Lane Group LOS	E	D	D	D	B	C
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.63	10.60	10.50	3.33	5.56	4.74
50th-Percentile Queue Length [ft/ln]	40.81	264.97	262.57	83.21	138.88	118.49
95th-Percentile Queue Length [veh/ln]	2.94	15.94	15.82	5.99	9.42	8.31
95th-Percentile Queue Length [ft/ln]	73.46	398.45	395.44	149.78	235.52	207.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.70	43.69	0.00	0.00	46.09	35.87	0.00	0.00	0.00	19.86	20.00	20.38
Movement LOS	E	D			D	D				B	C	C
d_A, Approach Delay [s/veh]	45.19		43.26		0.00		20.10					
Approach LOS	D		D		A		C					
d_I, Intersection Delay [s/veh]	35.11											
Intersection LOS	D											
Intersection V/C	0.374											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 29.6
Level Of Service: C
Volume to Capacity (v/c): 0.524

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	50	300	180	170	150	40	130	510	30	200	580	120
Base Volume Input [veh/h]	50	300	180	170	150	40	130	510	30	200	580	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	300	180	170	150	40	130	510	30	200	580	120
Peak Hour Factor	0.9113	0.9113	0.9113	0.9394	0.9394	0.9394	0.9213	0.9213	0.9213	0.8418	0.8418	0.8418
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	82	49	45	40	11	35	138	8	59	172	36
Total Analysis Volume [veh/h]	55	329	198	181	160	43	141	554	33	238	689	143
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	47	47	47	34	19	19	34	23	23
g / C, Green / Cycle	0.39	0.39	0.39	0.52	0.52	0.52	0.38	0.21	0.21	0.38	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.17	0.13	0.15	0.08	0.03	0.16	0.16	0.16	0.20	0.23	0.24
s, saturation flow rate [veh/h]	1229	1900	1541	1218	1900	1568	901	1900	1814	1210	1900	1710
c, Capacity [veh/h]	477	741	601	613	983	811	389	406	387	455	486	438
d1, Uniform Delay [s]	21.61	20.26	19.22	12.56	11.45	10.78	21.34	33.02	33.19	21.31	32.20	32.64
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.15	0.18
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	1.92	1.46	1.23	0.36	0.12	0.21	0.96	1.11	4.26	7.39	12.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

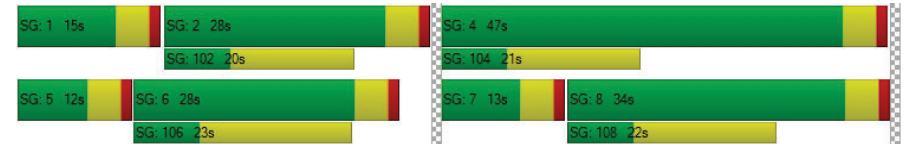
X, volume / capacity	0.12	0.44	0.33	0.30	0.16	0.05	0.36	0.73	0.75	0.52	0.88	0.92
d, Delay for Lane Group [s/veh]	22.11	22.18	20.68	13.78	11.81	10.91	21.55	33.97	34.30	25.57	39.59	45.41
Lane Group LOS	C	C	C	B	B	B	C	C	C	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.86	5.22	3.00	2.01	1.66	0.42	1.92	5.92	5.86	3.94	9.57	9.74
50th-Percentile Queue Length [ft/ln]	21.51	130.58	75.02	50.22	41.52	10.59	47.97	148.07	146.43	98.39	239.36	243.49
95th-Percentile Queue Length [veh/ln]	1.55	8.97	5.40	3.62	2.99	0.76	3.45	9.91	9.83	7.08	14.65	14.86
95th-Percentile Queue Length [ft/ln]	38.72	224.29	135.04	90.40	74.74	19.07	86.34	247.85	245.65	177.10	366.23	371.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.11	22.18	20.68	13.78	11.81	10.91	21.55	34.12	34.30	25.57	41.79	45.41
Movement LOS	C	C	C	B	B	B	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	21.66			12.64			31.70			38.67		
Approach LOS	C			B			C			D		
d_I, Intersection Delay [s/veh]	29.63											
Intersection LOS	C											
Intersection V/C	0.524											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	28.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.324

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	90	130	110	110	140	40	30	470	110	150	640	120
Base Volume Input [veh/h]	90	130	110	110	140	40	30	470	110	150	640	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	130	110	110	140	40	30	470	110	150	640	120
Peak Hour Factor	0.7729	0.7729	0.7729	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	42	36	30	38	11	8	125	29	41	177	33
Total Analysis Volume [veh/h]	116	168	142	118	151	43	32	500	117	165	706	132
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	32	32	32	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.32	0.32	0.32	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.09	0.10	0.08	0.03	0.05	0.14	0.07	0.15	0.23	0.23
s, saturation flow rate [veh/h]	1256	1900	1577	1237	1900	1581	666	3618	1579	1119	1900	1780
c, Capacity [veh/h]	203	369	306	190	369	307	162	1164	508	504	844	791
d1, Uniform Delay [s]	44.23	35.68	35.74	45.24	35.33	33.44	39.36	26.72	24.87	17.77	20.00	20.05
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.94	0.33	0.41	1.23	0.27	0.08	2.72	1.16	1.06	0.14	2.20	2.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

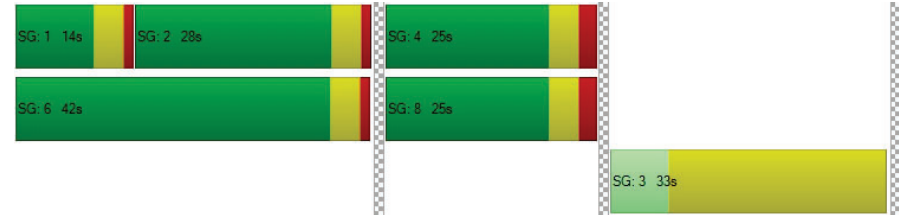
X, volume / capacity	0.57	0.46	0.46	0.62	0.41	0.14	0.20	0.43	0.23	0.33	0.51	0.52
d, Delay for Lane Group [s/veh]	45.17	36.01	36.15	46.47	35.61	33.51	42.08	27.88	25.93	17.91	22.20	22.45
Lane Group LOS	D	D	D	D	D	C	D	C	C	B	C	C
Critical Lane Group	No	No	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.84	3.59	3.05	2.94	3.19	0.86	0.83	4.82	2.17	2.30	7.51	7.16
50th-Percentile Queue Length [ft/ln]	70.92	89.73	76.13	73.44	79.81	21.48	20.84	120.40	54.13	57.53	187.84	179.10
95th-Percentile Queue Length [veh/ln]	5.11	6.46	5.48	5.29	5.75	1.55	1.50	8.41	3.90	4.14	12.01	11.55
95th-Percentile Queue Length [ft/ln]	127.66	161.51	137.04	132.19	143.67	38.67	37.50	210.37	97.44	103.55	300.23	288.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.17	36.01	36.15	46.47	35.61	33.51	42.08	27.88	25.93	17.91	22.29	22.45
Movement LOS	D	D	D	D	D	C	D	C	C	B	C	C
d_A, Approach Delay [s/veh]	38.55			39.43			28.23			21.59		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.75											
Intersection LOS	C											
Intersection V/C	0.324											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 30.3
Level Of Service: C
Volume to Capacity (v/c): 0.381

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	30	160	60	50	280	60	30	140	90	80	150	70
Base Volume Input [veh/h]	30	160	60	50	280	60	30	140	90	80	150	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	160	60	50	280	60	30	140	90	80	150	70
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	45	17	16	90	19	9	40	26	22	42	19
Total Analysis Volume [veh/h]	34	181	68	64	359	77	34	159	102	89	166	78
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	40	40	40	28	28
g / C, Green / Cycle	0.40	0.40	0.40	0.40	0.40	0.40	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.04	0.05	0.12	0.12	0.19	0.26
s, saturation flow rate [veh/h]	968	1900	1554	1222	1900	1762	1588	1280
c, Capacity [veh/h]	358	757	620	457	757	702	482	402
d1, Uniform Delay [s]	25.70	19.98	18.91	24.77	20.49	20.56	31.34	35.55
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.10	0.35
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	0.74	0.36	0.64	0.99	1.11	1.22	13.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

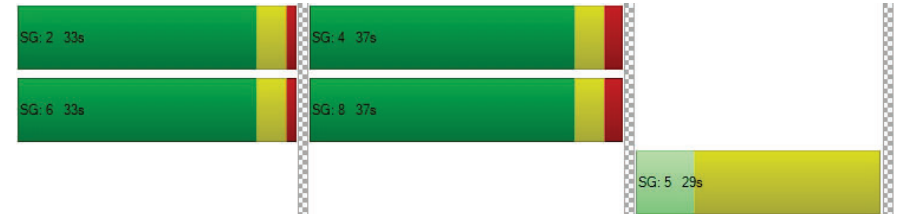
X, volume / capacity	0.09	0.24	0.11	0.14	0.29	0.30	0.61	0.83
d, Delay for Lane Group [s/veh]	26.23	20.73	19.26	25.41	21.48	21.67	32.56	48.60
Lane Group LOS	C	C	B	C	C	C	C	D
Critical Lane Group	No	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.63	2.88	1.03	1.16	3.65	3.51	6.27	9.20
50th-Percentile Queue Length [ft/ln]	15.80	71.90	25.71	28.91	91.15	87.67	156.84	230.08
95th-Percentile Queue Length [veh/ln]	1.14	5.18	1.85	2.08	6.56	6.31	10.38	14.18
95th-Percentile Queue Length [ft/ln]	28.45	129.42	46.27	52.05	164.07	157.81	259.53	354.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.23	20.73	19.26	25.41	21.55	21.67	32.56	32.56	32.56	48.60	48.60	48.60
Movement LOS	C	C	B	C	C	C	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.04			22.06			32.56			48.60		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.32											
Intersection LOS	C											
Intersection V/C	0.381											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.6
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.304

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	30	200	80	70	360	60	0	310	180	0	360	70
Base Volume Input [veh/h]	30	200	80	70	360	60	0	310	180	0	360	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	200	80	70	360	60	0	310	180	0	360	70
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	61	24	19	97	16	0	84	49	0	103	20
Total Analysis Volume [veh/h]	36	242	97	76	388	65	0	335	195	0	410	80
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	50	50	50	20	20	20	20
g / C, Green / Cycle	0.50	0.50	0.50	0.50	0.50	0.50	0.20	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.06	0.07	0.12	0.12	0.18	0.12	0.13	0.14
s, saturation flow rate [veh/h]	953	1900	1583	1156	1900	1793	1900	1563	1900	1781
c, Capacity [veh/h]	454	951	792	533	951	898	373	307	373	350
d1, Uniform Delay [s]	18.62	14.29	13.28	19.34	14.20	14.23	39.19	36.89	37.06	37.43
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.08	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.64	0.32	0.56	0.61	0.66	5.85	0.82	0.74	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

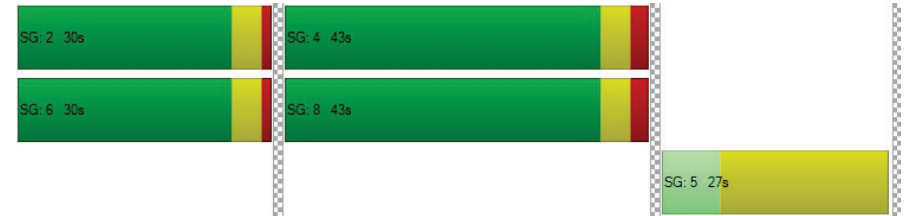
X, volume / capacity	0.08	0.25	0.12	0.14	0.24	0.25	0.90	0.64	0.66	0.70
d, Delay for Lane Group [s/veh]	18.96	14.94	13.60	19.90	14.80	14.89	45.05	37.70	37.80	38.39
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.55	3.15	1.18	1.19	2.99	2.88	8.51	4.40	5.54	5.62
50th-Percentile Queue Length [ft/ln]	13.70	78.72	29.49	29.66	74.63	72.11	212.83	110.03	138.61	140.40
95th-Percentile Queue Length [veh/ln]	0.99	5.67	2.12	2.14	5.37	5.19	13.30	7.84	9.41	9.50
95th-Percentile Queue Length [ft/ln]	24.65	141.69	53.08	53.39	134.33	129.80	332.45	196.04	235.16	237.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.96	14.94	13.60	19.90	14.84	14.89	0.00	45.05	37.70	0.00	38.04	38.39
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	14.98			15.57			42.34			38.10		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.57											
Intersection LOS	C											
Intersection V/C	0.304											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 40.9
Level Of Service: D
Volume to Capacity (v/c): 0.476

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	160	290	130	80	340	70	0	220	210	110	380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	160	290	130	80	340	70	0	220	210	110	380	90
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	84	38	26	109	23	0	61	58	31	109	26
Total Analysis Volume [veh/h]	185	335	150	103	437	90	0	245	234	126	435	103
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	16	47	47	58	37	37	18	39	30	30	30
g / C, Green / Cycle	0.14	0.39	0.39	0.48	0.31	0.31	0.15	0.32	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.10	0.09	0.14	0.14	0.13	0.15	0.09	0.23	0.07
s, saturation flow rate [veh/h]	1810	1900	1567	1183	1900	1770	1900	1562	1375	1900	1565
c, Capacity [veh/h]	246	740	610	520	589	549	279	502	286	469	387
d1, Uniform Delay [s]	49.91	27.17	24.75	18.12	33.31	33.42	50.16	32.53	37.63	44.14	36.43
k, delay calibration	0.13	0.50	0.50	0.50	0.50	0.50	0.04	0.09	0.16	0.21	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.36	2.00	0.96	0.85	2.56	2.84	3.50	0.55	1.53	14.33	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.45	0.25	0.20	0.46	0.47	0.88	0.47	0.44	0.93	0.27
d, Delay for Lane Group [s/veh]	55.27	29.16	25.70	18.98	35.88	36.26	53.66	33.08	39.16	58.47	36.57
Lane Group LOS	E	C	C	B	D	D	D	C	D	E	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.66	7.42	3.02	1.66	6.69	6.40	7.46	5.51	3.10	14.28	2.44
50th-Percentile Queue Length [ft/ln]	141.45	185.45	75.52	41.49	167.37	160.10	186.56	137.70	77.54	357.07	61.01
95th-Percentile Queue Length [veh/ln]	9.56	11.88	5.44	2.99	10.94	10.55	11.94	9.36	5.58	20.48	4.39
95th-Percentile Queue Length [ft/ln]	238.97	297.12	135.93	74.68	273.45	263.85	298.56	233.92	139.57	512.02	109.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.27	29.16	25.70	18.98	36.02	36.26	0.00	53.66	33.08	39.16	58.47	36.57
Movement LOS	E	C	C	B	D	D		D	C	D	E	D
d_A, Approach Delay [s/veh]	35.60			33.27			43.60			51.41		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	40.86											
Intersection LOS	D											
Intersection V/C	0.476											

Sequence

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



Intersection Level Of Service Report

Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 23.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.423

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	190	530	0	0	620	150	181	0	84	170	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	190	530	0	0	620	150	181	0	84	170	180	30
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	158	0	0	171	41	52	0	24	47	49	8
Total Analysis Volume [veh/h]	227	634	0	0	684	166	208	0	96	187	198	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	61	61	16	16
g / C, Green / Cycle	0.62	0.62	0.51	0.51	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.27	0.18	0.22	0.24	0.12	0.12
s, saturation flow rate [veh/h]	836	3618	1900	1744	1822	1673
c, Capacity [veh/h]	500	2240	963	884	250	230
d1, Uniform Delay [s]	12.40	10.56	18.79	19.28	50.72	50.72
k, delay calibration	0.28	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.65	0.32	1.47	1.87	3.64	3.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.28	0.44	0.48	0.87	0.87
d, Delay for Lane Group [s/veh]	14.06	10.87	20.25	21.15	54.36	54.66
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.78	3.87	7.68	7.94	6.71	6.18
50th-Percentile Queue Length [ft/ln]	69.38	96.71	191.93	198.41	167.83	154.60
95th-Percentile Queue Length [veh/ln]	5.00	6.96	12.22	12.56	10.96	10.26
95th-Percentile Queue Length [ft/ln]	124.88	174.07	305.53	313.91	274.06	256.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.06	10.87	0.00	0.00	20.59	21.15	0.00	0.00	0.00	54.36	54.61	54.66
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	11.71		20.70			0.00		54.50				
Approach LOS	B		C			A		D				
d_I, Intersection Delay [s/veh]	23.70											
Intersection LOS	C											
Intersection V/C	0.423											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.467

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					┌┐┌	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		650	340
	360	0	0	740		
Base Volume Input [veh/h]	360	0	0	740	650	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	0	0	740	650	340
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	0	0	209	178	93
Total Analysis Volume [veh/h]	411	0	0	837	714	373
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	80	80	31	31
g / C, Green / Cycle	0.67	0.67	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.11	0.23	0.20	0.24
s, saturation flow rate [veh/h]	3618	3618	3514	1584
c, Capacity [veh/h]	2413	2413	901	406
d1, Uniform Delay [s]	7.50	8.65	41.59	43.34
k, delay calibration	0.50	0.50	0.04	0.12
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	0.40	0.61	9.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

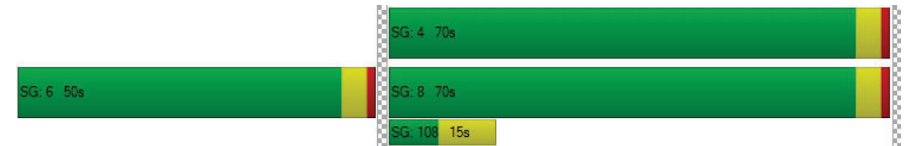
X, volume / capacity	0.17	0.35	0.79	0.92
d, Delay for Lane Group [s/veh]	7.65	9.04	42.19	52.91
Lane Group LOS	A	A	D	D
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.96	4.61	9.37	11.19
50th-Percentile Queue Length [ft/ln]	48.95	115.26	234.15	279.87
95th-Percentile Queue Length [veh/ln]	3.52	8.13	14.39	16.68
95th-Percentile Queue Length [ft/ln]	88.11	203.30	359.63	417.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.65	0.00	0.00	9.04	42.19	52.91
Movement LOS	A			A	D	D
d_A, Approach Delay [s/veh]	7.65		9.04		45.87	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				25.94		
Intersection LOS				C		
Intersection V/C				0.467		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 43.3
 Level Of Service: D
 Volume to Capacity (v/c): 0.538

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T			T			T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	40	310	390	470	620	230	100	590	40	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	310	390	470	620	230	100	590	40	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	79	100	131	173	64	30	176	12	0	0	0
Total Analysis Volume [veh/h]	41	317	399	525	693	257	119	705	48	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	25	25	59	80	80	22	22	22
g / C, Green / Cycle	0.03	0.21	0.21	0.49	0.67	0.67	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.22	0.15	0.26	0.28	0.17	0.17	0.17
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1622	1864	1729	1670
c, Capacity [veh/h]	57	396	376	1733	1274	1087	341	316	305
d1, Uniform Delay [s]	57.47	45.01	47.38	18.08	8.78	9.07	47.90	47.87	47.96
k, delay calibration	0.04	0.25	0.46	0.04	0.50	0.50	0.14	0.14	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.22	8.18	62.28	0.04	0.89	1.20	11.10	11.44	12.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

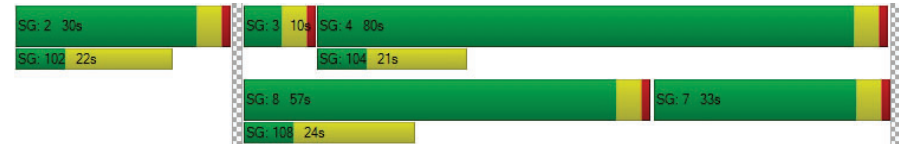
X, volume / capacity	0.72	0.80	1.06	0.30	0.39	0.42	0.90	0.90	0.91
d, Delay for Lane Group [s/veh]	63.69	53.18	109.66	18.12	9.66	10.27	59.00	59.31	60.96
Lane Group LOS	E	D	F	B	A	B	E	E	E
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.33	9.83	17.64	4.33	5.68	5.54	9.96	9.23	9.14
50th-Percentile Queue Length [ft/ln]	33.27	245.78	440.93	108.21	142.06	138.38	248.88	230.85	228.54
95th-Percentile Queue Length [veh/ln]	2.40	14.97	25.36	7.74	9.59	9.39	15.13	14.22	14.10
95th-Percentile Queue Length [ft/ln]	59.88	374.34	633.94	193.51	239.80	234.84	378.24	355.44	352.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.69	53.18	109.66	18.12	9.84	10.27	59.00	59.77	60.96	0.00	0.00	0.00
Movement LOS	E	D	F	B	A	B	E	E	E			
d_A, Approach Delay [s/veh]	83.52			12.86			59.73			0.00		
Approach LOS	F			B			E			A		
d_I, Intersection Delay [s/veh]	43.26											
Intersection LOS	D											
Intersection V/C	0.538											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.7
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.393

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	100	140	130	40	90	10	20	620	80	100	870	100
Base Volume Input [veh/h]	100	140	130	40	90	10	20	620	80	100	870	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	140	130	40	90	10	20	620	80	100	870	100
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	39	36	11	24	3	5	162	21	27	233	27
Total Analysis Volume [veh/h]	111	155	144	42	95	11	21	647	83	107	931	107
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	25	25	25	25	25	62	62	62	62	62	62
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.10	0.04	0.06	0.04	0.18	0.06	0.14	0.28	0.29
s, saturation flow rate [veh/h]	1153	1900	1449	1182	1819	552	3618	1425	782	1900	1739
c, Capacity [veh/h]	282	472	360	263	452	313	2241	883	472	1177	1077
d1, Uniform Delay [s]	36.96	30.69	31.29	36.35	29.93	16.45	8.80	7.67	13.80	10.01	10.22
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.15	0.27	0.10	0.10	0.41	0.33	0.21	1.11	1.24	1.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

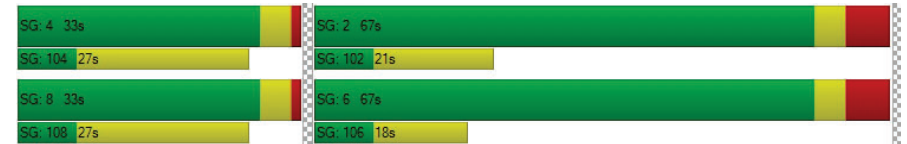
X, volume / capacity	0.39	0.33	0.40	0.16	0.23	0.07	0.29	0.09	0.23	0.45	0.47
d, Delay for Lane Group [s/veh]	37.29	30.84	31.56	36.45	30.02	16.87	9.13	7.88	14.91	11.25	11.72
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.43	3.01	2.86	0.88	2.01	0.31	3.13	0.73	1.47	6.02	5.99
50th-Percentile Queue Length [ft/ln]	60.78	75.32	71.56	22.11	50.21	7.85	78.18	18.22	36.73	150.58	149.70
95th-Percentile Queue Length [veh/ln]	4.38	5.42	5.15	1.59	3.62	0.57	5.63	1.31	2.64	10.05	10.00
95th-Percentile Queue Length [ft/ln]	109.40	135.57	128.81	39.80	90.38	14.13	140.73	32.80	66.12	251.21	250.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.29	30.84	31.56	36.45	30.02	30.02	16.87	9.13	7.88	14.91	11.45	11.72
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	32.84			31.85			9.20			11.80		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	15.73											
Intersection LOS	B											
Intersection V/C	0.393											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.5
Level Of Service: C
Volume to Capacity (v/c): 0.500

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	120	240	50	40	220	30	30	320	60	50	230	70
Base Volume Input [veh/h]	120	240	50	40	220	30	30	320	60	50	230	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	240	50	40	220	30	30	320	60	50	230	70
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	65	14	12	65	9	9	93	17	15	69	21
Total Analysis Volume [veh/h]	131	261	54	47	260	35	35	371	70	60	277	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	2.0	3.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	14	16	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	54	54	54	54	54	36	36
g / C, Green / Cycle	0.54	0.54	0.54	0.54	0.54	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.12	0.08	0.09	0.04	0.16	0.31	0.34
s, saturation flow rate [veh/h]	1061	1900	1709	1049	1821	1548	1247
c, Capacity [veh/h]	552	1033	929	589	989	603	496
d1, Uniform Delay [s]	17.11	11.38	11.45	13.47	12.43	28.03	29.11
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.17	0.22
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	0.32	0.39	0.27	0.77	3.68	7.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

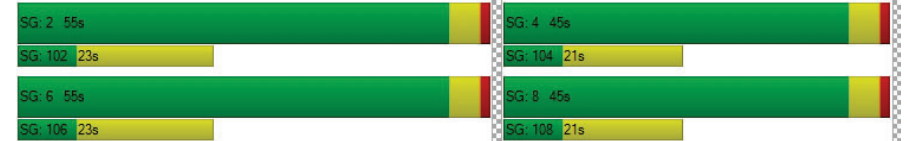
X, volume / capacity	0.24	0.16	0.17	0.08	0.30	0.79	0.85
d, Delay for Lane Group [s/veh]	18.13	11.70	11.83	13.74	13.20	31.71	36.99
Lane Group LOS	B	B	B	B	B	C	D
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.96	1.77	1.72	0.58	3.58	10.34	10.35
50th-Percentile Queue Length [ft/ln]	49.12	44.36	43.02	14.60	89.54	258.50	258.85
95th-Percentile Queue Length [veh/ln]	3.54	3.19	3.10	1.05	6.45	15.61	15.63
95th-Percentile Queue Length [ft/ln]	88.42	79.85	77.44	26.28	161.17	390.34	390.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.13	11.75	11.83	13.74	13.20	13.20	31.71	31.71	31.71	36.99	36.99	36.99
Movement LOS	B	B	B	B	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	13.63			13.27			31.71			36.99		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	24.50											
Intersection LOS	C											
Intersection V/C	0.500											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 27.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.369

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	180	320	120	70	230	60	60	420	70	70	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	320	120	70	230	60	60	420	70	70	270	60
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8553	0.8553	0.8553	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	91	34	20	65	17	18	123	20	22	84	19
Total Analysis Volume [veh/h]	205	365	137	79	260	68	70	491	82	87	337	75
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.19	0.14	0.15	0.09	0.19	0.07	0.15	0.16	0.10	0.18	0.05
s, saturation flow rate [veh/h]	1068	1900	1568	894	1753	1033	1900	1712	833	1900	1400
c, Capacity [veh/h]	193	559	462	205	516	545	1090	982	461	1090	803
d1, Uniform Delay [s]	46.39	28.85	29.36	39.74	30.60	15.72	10.74	10.86	15.85	11.04	9.60
k, delay calibration	0.12	0.04	0.04	0.04	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	49.00	0.23	0.34	0.44	1.30	0.49	0.61	0.73	0.91	0.74	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

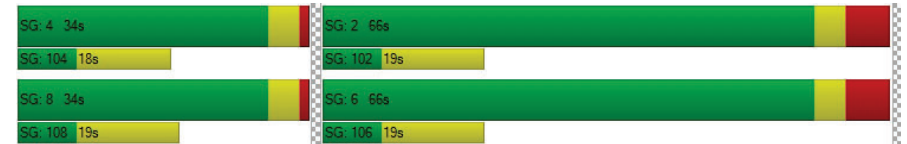
X, volume / capacity	1.06	0.47	0.52	0.39	0.64	0.13	0.27	0.29	0.19	0.31	0.09
d, Delay for Lane Group [s/veh]	95.39	29.08	29.70	40.18	31.90	16.21	11.35	11.59	16.76	11.78	9.83
Lane Group LOS	F	C	C	D	C	B	B	B	B	B	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.40	5.05	4.71	1.80	6.84	0.99	3.28	3.20	1.27	3.89	0.76
50th-Percentile Queue Length [ft/ln]	184.99	126.24	117.76	45.12	170.96	24.64	82.06	79.91	31.82	97.24	19.02
95th-Percentile Queue Length [veh/ln]	12.24	8.73	8.27	3.25	11.13	1.77	5.91	5.75	2.29	7.00	1.37
95th-Percentile Queue Length [ft/ln]	305.97	218.37	206.75	81.21	278.18	44.35	147.71	143.84	57.28	175.03	34.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	95.39	29.26	29.70	40.18	31.90	31.90	16.21	11.45	11.59	16.76	11.78	9.83
Movement LOS	F	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	48.52			33.51			11.98			12.36		
Approach LOS	D			C			B			B		
d_I, Intersection Delay [s/veh]	27.40											
Intersection LOS	C											
Intersection V/C	0.369											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.4
Level Of Service: C
Volume to Capacity (v/c): 0.449

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	120	470	130	60	170	130	100	340	80	80	370	80
Base Volume Input [veh/h]	120	470	130	60	170	130	100	340	80	80	370	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	470	130	60	170	130	100	340	80	80	370	80
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	123	34	17	47	36	27	90	21	22	102	22
Total Analysis Volume [veh/h]	126	493	136	67	189	145	106	362	85	88	409	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	31	31	31	31	31	59	59	59	59	59
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.31	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.12	0.17	0.18	0.08	0.20	0.11	0.25	0.09	0.22	0.06
s, saturation flow rate [veh/h]	1063	1900	1664	808	1682	976	1784	949	1900	1426
c, Capacity [veh/h]	199	594	520	182	526	526	1062	491	1131	848
d1, Uniform Delay [s]	43.93	28.47	28.84	40.60	29.43	16.00	10.92	17.16	10.43	8.72
k, delay calibration	0.04	0.04	0.07	0.04	0.12	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	0.32	0.70	0.46	1.38	0.86	1.23	0.80	0.90	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.55	0.58	0.37	0.63	0.20	0.42	0.18	0.36	0.10
d, Delay for Lane Group [s/veh]	45.17	28.79	29.54	41.06	30.81	16.86	12.15	17.95	11.33	8.97
Lane Group LOS	D	C	C	D	C	B	B	B	B	A
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	3.12	6.33	6.01	1.55	6.85	1.52	5.22	1.31	4.53	0.82
50th-Percentile Queue Length [ft/ln]	77.89	158.19	150.31	38.65	171.22	38.05	130.48	32.79	113.18	20.54
95th-Percentile Queue Length [veh/ln]	5.61	10.45	10.03	2.78	11.14	2.74	8.97	2.36	8.02	1.48
95th-Percentile Queue Length [ft/ln]	140.20	261.32	250.84	69.56	278.52	68.48	224.15	59.03	200.42	36.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.17	29.04	29.54	41.06	30.81	30.81	16.86	12.15	12.15	17.95	11.33	8.97
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	31.82			32.52			13.05			11.97		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.36											
Intersection LOS	C											
Intersection V/C	0.449											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 23.8
 Level Of Service: C
 Volume to Capacity (v/c): 0.417

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	14	610	80	60	30	210	0	0	0	6	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	610	80	60	30	210	0	0	0	6	180	80
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	168	22	18	9	62	0	0	0	2	59	26
Total Analysis Volume [veh/h]	15	671	88	71	35	248	0	0	0	6	238	106
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	6	49	40
g / C, Green / Cycle	0.39	0.39	0.06	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.19	0.07	0.04	0.18	0.19
s, saturation flow rate [veh/h]	3618	1338	1810	1581	1789
c, Capacity [veh/h]	1398	517	109	780	724
d1, Uniform Delay [s]	23.09	20.13	45.92	15.65	21.91
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.18	0.71	2.42	1.31	2.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

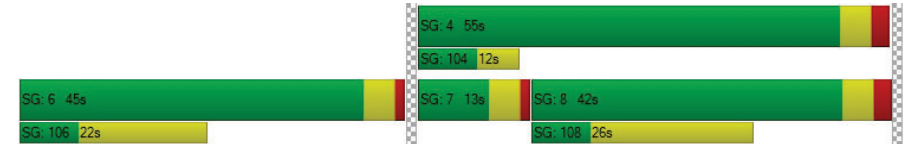
X, volume / capacity	0.48	0.17	0.65	0.36	0.47
d, Delay for Lane Group [s/veh]	24.27	20.84	48.34	16.96	24.13
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.05	1.43	1.77	4.06	6.26
50th-Percentile Queue Length [ft/ln]	151.30	35.84	44.30	101.51	156.56
95th-Percentile Queue Length [veh/ln]	10.09	2.58	3.19	7.31	10.37
95th-Percentile Queue Length [ft/ln]	252.16	64.52	79.73	182.71	259.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.27	20.84	48.34	16.96	16.96	0.00	0.00	0.00	0.00	24.13	24.13
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		23.87		23.25		0.00				24.13		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		23.78										
Intersection LOS		C										
Intersection V/C		0.417										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 15.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.394

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	30	140	30	30	110	20	30	360	40	40	290	50
Base Volume Input [veh/h]	30	140	30	30	110	20	30	360	40	40	290	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	140	30	30	110	20	30	360	40	40	290	50
Peak Hour Factor	0.9215	0.9215	0.9215	0.9000	0.9000	0.9000	0.9174	0.9174	0.9174	0.9183	0.9183	0.9183
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	38	8	8	31	6	8	98	11	11	79	14
Total Analysis Volume [veh/h]	33	152	33	33	122	22	33	392	44	44	316	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	17	73	73	73
g / C, Green / Cycle	0.17	0.17	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.13	0.12	0.26	0.22	0.03
s, saturation flow rate [veh/h]	1637	1503	1798	1654	1575
c, Capacity [veh/h]	324	302	1361	1257	1159
d1, Uniform Delay [s]	39.24	38.20	4.67	4.31	3.62
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.92	0.68	0.69	0.57	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.59	0.34	0.29	0.05
d, Delay for Lane Group [s/veh]	40.16	38.88	5.36	4.88	3.69
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.07	4.00	2.93	2.09	0.26
50th-Percentile Queue Length [ft/ln]	126.77	100.09	73.14	52.18	6.55
95th-Percentile Queue Length [veh/ln]	8.76	7.21	5.27	3.76	0.47
95th-Percentile Queue Length [ft/ln]	219.10	180.16	131.65	93.92	11.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.16	40.16	40.16	38.88	38.88	38.88	5.36	5.36	5.36	4.88	4.88	3.69
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.16			38.88			5.36			4.73		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	15.73											
Intersection LOS	B											
Intersection V/C	0.394											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.487

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	20	80	40	70	110	20	20	580	60	60	310	50
Base Volume Input [veh/h]	20	80	40	70	110	20	20	580	60	60	310	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	80	40	70	110	20	20	580	60	60	310	50
Peak Hour Factor	0.7916	0.7916	0.7916	0.9068	0.9068	0.9068	0.8681	0.8681	0.8681	0.9554	0.9554	0.9554
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	25	13	19	30	6	6	167	17	16	81	13
Total Analysis Volume [veh/h]	25	101	51	77	121	22	23	668	69	63	324	52
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	20	20	20	20	67	67	67	67	67	67
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.67	0.67	0.67	0.67	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.02	0.10	0.07	0.09	0.02	0.39	0.05	0.09	0.19	0.04
s, saturation flow rate [veh/h]	1093	1574	1099	1638	953	1710	1376	703	1710	1353
c, Capacity [veh/h]	185	318	176	331	614	1138	916	377	1138	901
d1, Uniform Delay [s]	41.10	35.21	44.05	34.85	9.52	9.16	5.88	17.55	6.89	5.80
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	0.41	0.64	0.33	0.11	2.22	0.16	0.95	0.63	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.48	0.44	0.43	0.04	0.59	0.08	0.17	0.28	0.06
d, Delay for Lane Group [s/veh]	41.23	35.62	44.69	35.18	9.63	11.38	6.04	18.50	7.51	5.93
Lane Group LOS	D	D	D	D	A	B	A	B	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.56	3.24	1.85	3.01	0.23	7.73	0.51	0.99	2.76	0.38
50th-Percentile Queue Length [ft/ln]	14.08	80.97	46.36	75.32	5.85	193.13	12.65	24.69	68.99	9.43
95th-Percentile Queue Length [veh/ln]	1.01	5.83	3.34	5.42	0.42	12.28	0.91	1.78	4.97	0.68
95th-Percentile Queue Length [ft/ln]	25.35	145.75	83.45	135.57	10.53	307.09	22.78	44.44	124.19	16.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.23	35.62	35.62	44.69	35.18	35.18	9.63	11.38	6.04	18.50	7.51	5.93
Movement LOS	D	D	D	D	D	D	A	B	A	B	A	A
d_A, Approach Delay [s/veh]	36.41			38.51			10.84			8.90		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	16.96											
Intersection LOS	B											
Intersection V/C	0.487											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 20.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.416

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	60	260	40	50	220	30	20	360	60	30	290	50
Base Volume Input [veh/h]	60	260	40	50	220	30	20	360	60	30	290	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	260	40	50	220	30	20	360	60	30	290	50
Peak Hour Factor	0.8626	0.8626	0.8626	0.9385	0.9385	0.9385	0.8974	0.8974	0.8974	0.9335	0.9335	0.9335
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	75	12	13	59	8	6	100	17	8	78	13
Total Analysis Volume [veh/h]	70	301	46	53	234	32	22	401	67	32	311	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	27	27	27	27	64	64	64
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.05	0.15	0.23	0.04	0.22
s, saturation flow rate [veh/h]	1113	1840	1049	1830	1858	1570	1765
c, Capacity [veh/h]	202	500	146	497	1220	999	1162
d1, Uniform Delay [s]	41.60	32.66	45.46	31.01	8.52	6.92	8.43
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.65	0.56	0.33	0.78	0.13	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.69	0.36	0.53	0.35	0.07	0.34
d, Delay for Lane Group [s/veh]	41.98	33.31	46.03	31.34	9.30	7.04	9.24
Lane Group LOS	D	C	D	C	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.65	7.59	1.31	5.51	4.08	0.53	3.81
50th-Percentile Queue Length [ft/ln]	41.33	189.81	32.85	137.66	102.09	13.18	95.20
95th-Percentile Queue Length [veh/ln]	2.98	12.11	2.36	9.35	7.35	0.95	6.85
95th-Percentile Queue Length [ft/ln]	74.39	302.79	59.12	233.86	183.76	23.72	171.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.98	33.31	33.31	46.03	31.34	31.34	9.30	9.30	7.04	9.24	9.24	9.24
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.76			33.78			8.99			9.24		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	20.54											
Intersection LOS	C											
Intersection V/C	0.416											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.425

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	60	250	50	120	220	30	20	490	50	50	440	80
Base Volume Input [veh/h]	60	250	50	120	220	30	20	490	50	50	440	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	250	50	120	220	30	20	490	50	50	440	80
Peak Hour Factor	0.9010	0.9010	0.9010	0.8750	0.8750	0.8750	0.9051	0.9051	0.9051	0.9496	0.9496	0.9496
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	69	14	34	63	9	6	135	14	13	116	21
Total Analysis Volume [veh/h]	67	277	55	137	251	34	22	541	55	53	463	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.13	0.15	0.02	0.16	0.16	0.06	0.24	0.05
s, saturation flow rate [veh/h]	1104	1833	1061	1850	941	1900	1822	830	1900	1547
c, Capacity [veh/h]	221	521	186	526	473	1109	1063	471	1109	903
d1, Uniform Delay [s]	39.81	31.24	45.51	30.25	16.83	10.30	10.32	14.40	11.45	9.16
k, delay calibration	0.04	0.12	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	1.41	2.15	0.32	0.19	0.61	0.65	0.48	1.16	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.64	0.74	0.54	0.05	0.27	0.28	0.11	0.42	0.09
d, Delay for Lane Group [s/veh]	40.09	32.65	47.65	30.57	17.01	10.90	10.97	14.89	12.61	9.36
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.54	7.18	3.55	5.85	0.32	3.30	3.23	0.72	5.66	0.82
50th-Percentile Queue Length [ft/ln]	38.53	179.58	88.75	146.19	7.95	82.56	80.69	17.91	141.60	20.53
95th-Percentile Queue Length [veh/ln]	2.77	11.58	6.39	9.81	0.57	5.94	5.81	1.29	9.57	1.48
95th-Percentile Queue Length [ft/ln]	69.36	289.46	159.74	245.33	14.31	148.61	145.23	32.24	239.18	36.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.09	32.65	32.65	47.65	30.57	30.57	17.01	10.93	10.97	14.89	12.61	9.36
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	33.90			36.12			11.15			12.35		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.12											
Intersection LOS	C											
Intersection V/C	0.425											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.504

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	260	350	170	60	290	30	20	710	200	150	960	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	350	170	60	290	30	20	710	200	150	960	70
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	93	45	19	90	9	5	186	52	40	256	19
Total Analysis Volume [veh/h]	275	370	180	75	361	37	21	744	210	160	1023	75
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.22	0.19	0.12	0.07	0.11	0.11	0.04	0.21	0.14	0.18	0.28	0.05
s, saturation flow rate [veh/h]	1231	1900	1525	1011	1900	1819	556	3618	1487	913	3618	1443
c, Capacity [veh/h]	447	670	538	127	442	423	209	1591	654	511	2008	801
d1, Uniform Delay [s]	26.55	26.01	23.74	48.05	32.93	33.01	29.52	19.76	18.27	12.18	13.80	10.44
k, delay calibration	0.50	0.05	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.20	0.34	0.13	1.65	0.27	0.30	0.96	0.99	1.30	1.59	0.93	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.55	0.33	0.59	0.46	0.46	0.10	0.47	0.32	0.31	0.51	0.09
d, Delay for Lane Group [s/veh]	32.75	26.35	23.88	49.69	33.20	33.30	30.48	20.75	19.57	13.77	14.73	10.67
Lane Group LOS	C	C	C	D	C	C	C	C	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.66	6.99	3.10	1.91	4.13	4.04	0.45	6.16	3.34	1.85	6.86	0.78
50th-Percentile Queue Length [ft/ln]	141.50	174.80	77.44	47.70	103.27	101.09	11.25	154.03	83.46	46.27	171.59	19.61
95th-Percentile Queue Length [veh/ln]	9.56	11.33	5.58	3.43	7.44	7.28	0.81	10.23	6.01	3.33	11.16	1.41
95th-Percentile Queue Length [ft/ln]	239.04	283.22	139.39	85.86	185.89	181.97	20.25	255.81	150.23	83.28	279.00	35.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.75	26.35	23.88	49.69	33.25	33.30	30.48	20.75	19.57	13.77	14.73	10.67
Movement LOS	C	C	C	D	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	27.94			35.86			20.70			14.36		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	22.17											
Intersection LOS	C											
Intersection V/C	0.504											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 29.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.648

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	180	730	70	20	520	30	20	190	220	40	150	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	730	70	20	520	30	20	190	220	40	150	40
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	192	18	6	154	9	5	50	58	11	41	11
Total Analysis Volume [veh/h]	190	769	74	24	616	36	21	202	234	44	164	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	55	55	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.55	0.55	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.23	0.03	0.17	0.17	0.25	0.16	0.41	0.03
s, saturation flow rate [veh/h]	946	1900	1817	772	1900	1850	892	1461	502	1508
c, Capacity [veh/h]	631	1054	1008	513	987	961	283	399	181	412
d1, Uniform Delay [s]	8.08	12.78	12.83	7.60	13.97	13.99	30.99	31.47	32.14	27.22
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.29	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.22	1.16	1.24	0.17	0.91	0.95	11.98	0.51	113.46	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

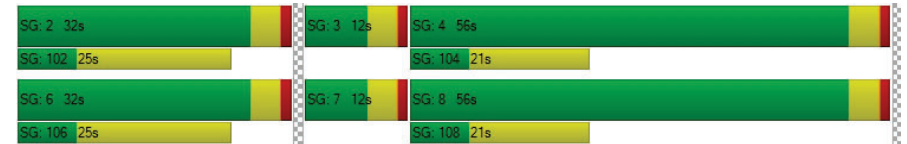
X, volume / capacity	0.30	0.41	0.41	0.05	0.33	0.34	0.79	0.59	1.15	0.11
d, Delay for Lane Group [s/veh]	9.30	13.94	14.08	7.77	14.88	14.94	42.98	31.98	145.60	27.26
Lane Group LOS	A	B	B	A	B	B	D	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.76	5.58	5.45	0.20	4.42	4.36	5.25	4.81	9.10	0.78
50th-Percentile Queue Length [ft/ln]	43.94	139.60	136.33	5.03	110.44	108.90	131.37	120.32	227.60	19.46
95th-Percentile Queue Length [veh/ln]	3.16	9.46	9.28	0.36	7.86	7.78	9.01	8.41	15.10	1.40
95th-Percentile Queue Length [ft/ln]	79.09	236.49	232.07	9.06	196.61	194.47	225.35	210.27	377.45	35.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.30	14.00	14.08	7.77	14.91	14.94	42.98	42.98	31.98	145.60	145.60	27.26
Movement LOS	A	B	B	A	B	B	D	D	C	F	F	C
d_A, Approach Delay [s/veh]	13.14			14.66			37.35			124.94		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	29.79											
Intersection LOS	C											
Intersection V/C	0.648											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 30.8
Level Of Service: C
Volume to Capacity (v/c): 0.600

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	140	810	100	160	590	40	40	500	220	120	340	150
Base Volume Input [veh/h]	140	810	100	160	590	40	40	500	220	120	340	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	810	100	160	590	40	40	500	220	120	340	150
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	208	26	42	156	11	11	139	61	33	94	41
Total Analysis Volume [veh/h]	144	833	103	169	624	42	44	556	245	132	375	165
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	55	43	43	55	43	43	25	25	25	36	36	36
g / C, Green / Cycle	0.55	0.43	0.43	0.55	0.43	0.43	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.15	0.25	0.25	0.21	0.18	0.18	0.04	0.22	0.24	0.13	0.20	0.11
s, saturation flow rate [veh/h]	960	1900	1802	818	1900	1840	993	1900	1578	984	1900	1452
c, Capacity [veh/h]	537	817	775	437	819	793	139	470	390	299	688	526
d1, Uniform Delay [s]	12.12	21.68	21.79	13.97	19.68	19.72	45.49	36.42	37.30	25.32	25.33	22.94
k, delay calibration	0.36	0.50	0.50	0.50	0.50	0.50	0.04	0.21	0.26	0.28	0.05	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	3.04	3.31	2.57	1.53	1.60	0.48	11.18	26.57	2.66	0.29	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.58	0.59	0.39	0.41	0.42	0.32	0.90	0.97	0.44	0.54	0.31
d, Delay for Lane Group [s/veh]	13.01	24.72	25.10	16.54	21.20	21.32	45.97	47.59	63.87	27.98	25.62	23.07
Lane Group LOS	B	C	C	B	C	C	D	D	E	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.66	8.94	8.70	2.13	5.64	5.54	1.08	11.22	11.87	2.33	6.98	2.78
50th-Percentile Queue Length [ft/ln]	41.47	223.59	217.41	53.26	141.02	138.60	26.93	280.44	296.71	58.25	174.39	69.39
95th-Percentile Queue Length [veh/ln]	2.99	13.85	13.53	3.83	9.54	9.41	1.94	16.71	17.52	4.19	11.31	5.00
95th-Percentile Queue Length [ft/ln]	74.65	346.21	338.31	95.87	238.40	235.14	48.48	417.76	437.96	104.84	282.67	124.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.01	24.88	25.10	16.54	21.26	21.32	45.97	51.52	63.87	27.98	25.62	23.07
Movement LOS	B	C	C	B	C	C	D	D	E	C	C	C
d_A, Approach Delay [s/veh]	23.32			20.30			54.81			25.46		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	30.76											
Intersection LOS	C											
Intersection V/C	0.600											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 37.9
Level Of Service: D
Volume to Capacity (v/c): 0.673

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	200	980	100	60	860	60	60	240	240	130	240	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	980	100	60	860	60	60	240	240	130	240	80
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	266	27	16	234	16	16	62	62	35	65	22
Total Analysis Volume [veh/h]	217	1063	108	65	936	65	62	249	249	140	259	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	11	51	51	36	36	36	26	26	26	35	35
g / C, Green / Cycle	0.11	0.51	0.51	0.36	0.36	0.36	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.12	0.31	0.32	0.13	0.27	0.27	0.05	0.13	0.18	0.30	0.06
s, saturation flow rate [veh/h]	1810	1900	1780	487	1900	1811	1138	1900	1352	1314	1366
c, Capacity [veh/h]	194	978	917	125	688	656	73	488	347	460	482
d1, Uniform Delay [s]	44.65	17.10	17.41	45.51	27.74	28.00	50.00	31.78	33.85	29.57	22.33
k, delay calibration	0.21	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.18	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	78.97	2.79	3.28	14.52	6.90	7.88	10.17	0.31	4.51	19.32	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

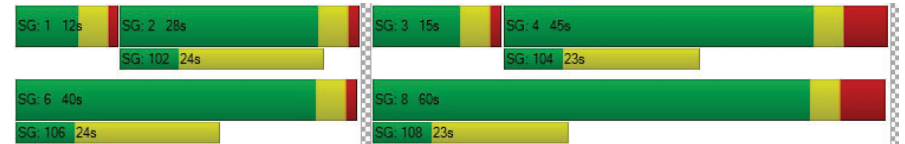
X, volume / capacity	1.12	0.61	0.63	0.52	0.74	0.75	0.86	0.51	0.72	0.87	0.18
d, Delay for Lane Group [s/veh]	123.61	19.89	20.70	60.03	34.64	35.89	60.17	32.08	38.35	48.89	22.40
Lane Group LOS	F	B	C	E	C	D	E	C	D	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	9.00	9.90	9.90	2.12	11.54	11.53	1.73	5.06	5.78	10.00	1.37
50th-Percentile Queue Length [ft/ln]	225.12	247.56	247.54	53.08	288.61	288.17	43.36	126.54	144.54	250.09	34.29
95th-Percentile Queue Length [veh/ln]	14.55	15.06	15.06	3.82	17.12	17.09	3.12	8.75	9.73	15.19	2.47
95th-Percentile Queue Length [ft/ln]	363.73	376.58	376.56	95.55	427.92	427.37	78.04	218.78	243.13	379.77	61.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.61	20.25	20.70	60.03	35.21	35.89	60.17	32.08	38.35	48.89	48.89	22.40
Movement LOS	F	C	C	E	D	D	E	C	D	D	D	C
d_A, Approach Delay [s/veh]	36.44		36.77			37.98			44.19			
Approach LOS	D		D			D			D			
d_I, Intersection Delay [s/veh]	37.86											
Intersection LOS	D											
Intersection V/C	0.673											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 52.3
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.623

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	180	1130	60	20	1170	30	6	90	170	66	180	90
Base Volume Input [veh/h]	180	1130	60	20	1170	30	6	90	170	66	180	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	1130	60	20	1170	30	6	90	170	66	180	90
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	298	16	5	305	8	2	27	50	18	51	25
Total Analysis Volume [veh/h]	190	1192	63	21	1219	31	7	106	201	70	203	101
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	96	96	96	96	96	96	96	96
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	12	39	39	3	30	30	40	40
g / C, Green / Cycle	0.12	0.41	0.41	0.03	0.31	0.31	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.33	0.34	0.01	0.33	0.33	0.19	0.17
s, saturation flow rate [veh/h]	1810	1900	1850	1810	1900	1872	1654	1778
c, Capacity [veh/h]	225	768	748	60	596	587	692	743
d1, Uniform Delay [s]	41.00	25.43	25.59	45.23	32.84	32.84	19.89	19.54
k, delay calibration	0.11	0.48	0.49	0.04	0.47	0.48	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.26	9.28	10.32	1.27	50.66	53.38	2.06	1.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

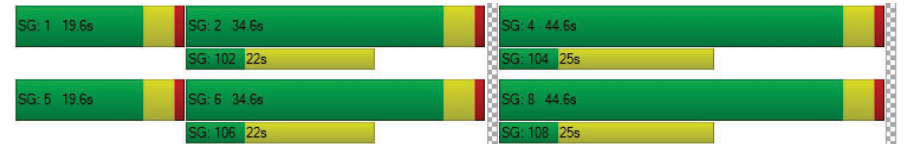
X, volume / capacity	0.85	0.82	0.83	0.35	1.05	1.06	0.44	0.41
d, Delay for Lane Group [s/veh]	49.26	34.71	35.91	46.50	83.50	86.22	21.95	21.21
Lane Group LOS	D	C	D	D	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	4.84	14.21	14.29	0.51	21.70	21.83	5.14	4.95
50th-Percentile Queue Length [ft/ln]	121.12	355.19	357.15	12.66	542.62	545.83	128.39	123.86
95th-Percentile Queue Length [veh/ln]	8.45	20.39	20.48	0.91	30.36	30.64	8.85	8.60
95th-Percentile Queue Length [ft/ln]	211.36	509.73	512.11	22.78	758.92	766.04	221.30	215.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.26	35.27	35.91	46.50	84.82	86.22	0.00	21.95	21.95	0.00	21.21	21.21
Movement LOS	D	D	D	D	F	F		C	C		C	C
d_A, Approach Delay [s/veh]	37.14			84.22			21.95			21.21		
Approach LOS	D			F			C			C		
d_I, Intersection Delay [s/veh]	52.27											
Intersection LOS	D											
Intersection V/C	0.623											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 53.1
 Level Of Service: D
 Volume to Capacity (v/c): 0.833

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	320	700	0	1370	50	0	0	0	0	700	560
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	320	700	0	1370	50	0	0	0	0	700	560	720
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	201	0	361	13	0	0	0	0	193	154	198
Total Analysis Volume [veh/h]	368	804	0	1443	53	0	0	0	0	770	616	792
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.20	0.22	0.28	0.27	0.31	0.30	0.32	0.35
s, saturation flow rate [veh/h]	1810	3618	3618	1861	1810	1864	1577	1573
c, Capacity [veh/h]	337	2123	1310	674	609	627	531	529
d1, Uniform Delay [s]	48.76	13.16	33.68	33.33	38.13	37.64	38.89	39.77
k, delay calibration	0.48	0.50	0.50	0.50	0.37	0.35	0.40	0.49
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	74.46	0.52	4.22	7.17	16.45	12.62	25.73	53.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.09	0.38	0.76	0.74	0.92	0.89	0.96	1.05
d, Delay for Lane Group [s/veh]	123.22	13.67	37.90	40.50	54.58	50.25	64.63	92.95
Lane Group LOS	F	B	D	D	D	D	E	F
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	17.02	5.78	13.42	13.86	17.70	16.92	17.64	22.60
50th-Percentile Queue Length [ft/ln]	425.47	144.44	335.50	346.53	442.5	423.1	441.0	565.1
95th-Percentile Queue Length [veh/ln]	24.88	9.72	19.43	19.97	24.60	23.67	24.53	31.46
95th-Percentile Queue Length [ft/ln]	622.06	242.99	485.70	499.18	615.0	591.7	613.2	786.5

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.22	13.67	0.00	0.00	38.71	40.50	0.00	0.00	0.00	53.31	56.60	84.66
Movement LOS	F	B			D	D				D	E	F
d_A, Approach Delay [s/veh]	48.07		38.77		0.00		65.62					
Approach LOS	D		D		A		E					
d_I, Intersection Delay [s/veh]	53.09											
Intersection LOS	D											
Intersection V/C	0.833											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 36.2
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.761

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	870	720	770	1280	0	120	110	320	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	870	720	770	1280	0	120	110	320	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	241	200	207	344	0	34	32	92	0	0	0
Total Analysis Volume [veh/h]	0	965	799	827	1374	0	138	126	367	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	38	38	38	43	85	25	25	25
g / C, Green / Cycle	0.32	0.32	0.32	0.35	0.71	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.29	0.24	0.38	0.08	0.07	0.23
s, saturation flow rate [veh/h]	3618	1503	1503	3514	3618	1810	1729	1579
c, Capacity [veh/h]	1152	479	479	1246	2574	383	366	334
d1, Uniform Delay [s]	36.84	39.43	39.43	32.67	8.05	40.34	40.20	47.28
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.37
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	3.23	3.23	2.80	0.80	0.21	0.21	71.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.92	0.92	0.66	0.53	0.36	0.34	1.10
d, Delay for Lane Group [s/veh]	37.25	42.65	42.65	35.46	8.85	40.55	40.40	118.59
Lane Group LOS	D	D	D	D	A	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.50	12.66	12.66	10.55	7.74	3.48	3.17	16.45
50th-Percentile Queue Length [ft/ln]	287.41	316.53	316.53	263.86	193.45	87.07	79.22	411.20
95th-Percentile Queue Length [veh/ln]	17.06	18.50	18.50	15.88	12.30	6.27	5.70	24.28
95th-Percentile Queue Length [ft/ln]	426.43	462.42	462.42	397.06	307.50	156.72	142.59	607.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	37.25	42.65	35.46	8.85	0.00	40.55	40.40	118.59	0.00	0.00	0.00
Movement LOS		D	D	D	A		D	D	F			
d_A, Approach Delay [s/veh]		39.95			18.85			85.91			0.00	
Approach LOS		D			B			F			A	
d_I, Intersection Delay [s/veh]		36.15										
Intersection LOS		D										
Intersection V/C		0.761										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 46.6
Level Of Service: D
Volume to Capacity (v/c): 0.581

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	590	270	100	820	140	190
Base Volume Input [veh/h]	590	270	100	820	140	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	590	270	100	820	140	190
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	165	75	31	257	40	55
Total Analysis Volume [veh/h]	659	301	125	1028	161	218
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.18	0.22	0.16	0.28	0.19	0.30
s, saturation flow rate [veh/h]	3618	1353	768	3618	832	734
c, Capacity [veh/h]	2509	938	535	2509	145	128
d1, Uniform Delay [s]	5.74	6.04	9.42	6.56	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.13	0.42
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.90	1.02	0.50	70.75	341.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.32	0.23	0.41	1.11	1.70
d, Delay for Lane Group [s/veh]	6.00	6.95	10.45	7.06	112.02	383.01
Lane Group LOS	A	A	B	A	F	F
Critical Lane Group	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.35	2.41	1.37	4.21	6.34	15.24
50th-Percentile Queue Length [ft/ln]	58.86	60.31	34.19	105.26	158.59	381.09
95th-Percentile Queue Length [veh/ln]	4.24	4.34	2.46	7.58	10.94	26.01
95th-Percentile Queue Length [ft/ln]	105.94	108.55	61.54	189.39	273.58	650.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.00	6.95	10.45	7.06	112.02	383.01
Movement LOS	A	A	B	A	F	F
d_A, Approach Delay [s/veh]	6.30		7.43		267.90	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	46.60					
Intersection LOS	D					
Intersection V/C	0.581					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 80.9
Level Of Service: F
Volume to Capacity (v/c): 0.614

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	30	250	160	240	190	30	80	260	60	50	230	120
Base Volume Input [veh/h]	30	250	160	240	190	30	80	260	60	50	230	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	250	160	240	190	30	80	260	60	50	230	120
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	70	45	67	53	8	21	68	16	15	67	35
Total Analysis Volume [veh/h]	34	281	180	270	214	34	84	272	63	59	269	141
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	49	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.54	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.03	0.27	0.25	0.14	0.08	0.19	0.06	0.27
s, saturation flow rate [veh/h]	1214	1690	1066	1816	991	1780	1062	1504
c, Capacity [veh/h]	796	875	619	987	80	325	80	274
d1, Uniform Delay [s]	6.65	14.42	9.39	10.88	45.02	36.81	45.02	36.81
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.20
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	2.27	2.23	0.61	42.16	23.17	4.84	230.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

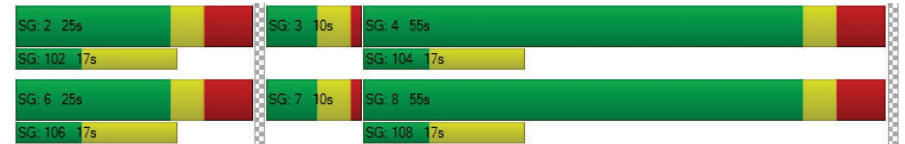
X, volume / capacity	0.04	0.53	0.44	0.25	1.05	1.03	0.74	1.49
d, Delay for Lane Group [s/veh]	6.66	16.69	11.62	11.49	87.18	59.98	49.87	267.01
Lane Group LOS	A	B	B	B	F	F	D	F
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.22	6.24	2.43	2.62	2.71	9.07	1.40	23.36
50th-Percentile Queue Length [ft/ln]	5.44	156.04	60.79	65.44	67.74	226.63	34.99	583.90
95th-Percentile Queue Length [veh/ln]	0.39	10.34	4.38	4.71	4.88	14.22	2.52	36.94
95th-Percentile Queue Length [ft/ln]	9.79	258.48	109.42	117.80	121.93	355.44	62.98	923.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.66	16.69	16.69	11.62	11.49	11.49	87.18	59.98	59.98	49.87	267.01	267.01
Movement LOS	A	B	B	B	B	B	F	E	E	D	F	F
d_A, Approach Delay [s/veh]	16.00			11.56			65.43			239.70		
Approach LOS	B			B			E			F		
d_I, Intersection Delay [s/veh]	80.87											
Intersection LOS	F											
Intersection V/C	0.614											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 35.0
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.536

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				No				Yes			

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	10	0	900	110	270	960	0	32	1085	209	80	0	200	0	0	0
Base Volume Input [veh/h]	10	0	900	110	270	960	0	32	1085	209	80	0	200	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	900	110	270	960	0	32	1085	209	80	0	200	0	0	0
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9070	0.9070	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	0.8012	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	241	30	74	265	0	8	271	52	25	0	62	0	0	0
Total Analysis Volume [veh/h]	10	0	966	118	298	1058	0	32	1085	209	100	0	250	0	0	0
Presence of On-Street Parking	No			No	No	No	No				No	No	No	No		
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0			
Bicycle Volume [bicycles/h]	22				6				42				51			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	104	104	117	111	23	23
g / C, Green / Cycle	0.01	0.69	0.69	0.78	0.74	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.27	0.07	0.42	0.29	0.08	0.22
s, saturation flow rate [veh/h]	1810	3618	1584	708	3618	1231	1132
c, Capacity [veh/h]	21	2509	1099	558	2678	192	177
d1, Uniform Delay [s]	73.64	9.60	7.60	6.28	7.15	58.07	63.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.28	0.45	0.20	3.64	0.44	0.81	216.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

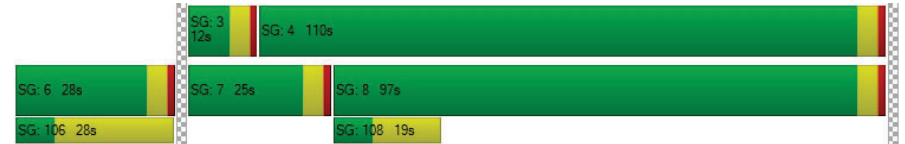
X, volume / capacity	0.48	0.38	0.11	0.53	0.40	0.52	1.41
d, Delay for Lane Group [s/veh]	79.92	10.05	7.80	9.92	7.59	58.88	279.36
Lane Group LOS	E	B	A	A	A	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.42	6.66	1.32	2.77	6.09	3.55	17.38
50th-Percentile Queue Length [ft/ln]	10.53	166.43	32.95	69.14	152.23	88.87	434.46
95th-Percentile Queue Length [veh/ln]	0.76	10.89	2.37	4.98	10.14	6.40	27.80
95th-Percentile Queue Length [ft/ln]	18.96	272.22	59.31	124.46	253.41	159.97	694.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	79.92	0.00	10.05	7.80	9.92	7.59	0.00	0.00	0.00	0.00	58.88	0.00	279.36
Movement LOS	E		B	A	A	A					E		F
d_A, Approach Delay [s/veh]	10.44			8.10			0.00			216.37			
Approach LOS	B			A			A			F			
d_I, Intersection Delay [s/veh]	35.05												
Intersection LOS	D												
Intersection V/C	0.536												

Sequence

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



APPROVAL YEAR (2020) PLUS PROJECT CONDITIONS

Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 70.5
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.205

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	10	2570	2	310	3460	30	10	10	10	250	20	250
Base Volume Input [veh/h]	10	2570	2	310	3460	30	10	10	10	250	20	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	4	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	2570	2	314	3460	30	10	10	10	254	20	253
Peak Hour Factor	0.8779	0.8779	1.0000	0.9383	0.9383	0.9383	0.8500	0.8500	0.8500	0.9161	0.9161	0.9161
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	732	1	84	922	8	3	3	3	69	5	69
Total Analysis Volume [veh/h]	11	2927	2	335	3687	32	12	12	12	277	22	276
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	6	25	0	6	25	0	6	6	0	0	6	6	
Maximum Green [s]	15	142	0	60	187	0	38	38	0	0	38	38	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	2.0	2.0	
Split [s]	15	142	0	60	187	0	40	40	0	0	40	40	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	5	5	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	13	13	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	3.2	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	Yes	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	240	240	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	5.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	3.20	0.00
g_i, Effective Green Time [s]	3	143	47	186	186	36	35	87
g / C, Green / Cycle	0.01	0.60	0.19	0.78	0.78	0.15	0.15	0.36
(v / s)_i Volume / Saturation Flow Rate	0.01	0.57	0.19	0.67	0.68	0.18	0.45	0.17
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1892	196	659	1594
c, Capacity [veh/h]	24	3081	352	2808	1468	49	124	575
d1, Uniform Delay [s]	117.59	45.27	95.64	18.45	18.62	92.54	106.79	59.29
k, delay calibration	0.04	0.50	0.24	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	8.15	23.36	3.96	7.41	64.51	655.54	2.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

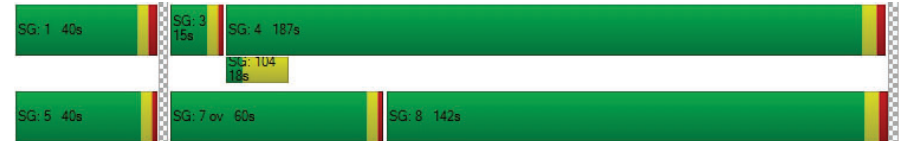
X, volume / capacity	0.46	0.95	0.95	0.87	0.87	0.73	2.40	0.48
d, Delay for Lane Group [s/veh]	122.72	53.42	119.01	22.41	26.03	157.05	762.34	62.14
Lane Group LOS	F	D	F	C	C	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.72	54.90	22.91	43.98	48.01	3.18	30.62	13.80
50th-Percentile Queue Length [ft/ln]	18.07	1372.53	572.72	1099.55	1200.22	79.51	765.38	344.91
95th-Percentile Queue Length [veh/ln]	1.30	67.05	30.76	54.86	59.37	5.72	49.97	19.89
95th-Percentile Queue Length [ft/ln]	32.52	1676.32	768.96	1371.46	1484.31	143.11	1249.17	497.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	122.72	53.42	0.00	119.01	23.64	26.03	157.05	157.05	157.05	762.34	762.34	62.14
Movement LOS	F	D		F	C	C	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	53.68			31.54			157.05			426.24		
Approach LOS	D			C			F			F		
d_I, Intersection Delay [s/veh]	70.54											
Intersection LOS	E											
Intersection V/C	1.205											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 72.1
Level Of Service: E
Volume to Capacity (v/c): 0.944

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	150	370	80	10	480	190	50	110	250	0	40	150	50
Base Volume Input [veh/h]	150	370	80	10	480	190	50	110	250	0	40	150	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	7	0	0	7	0	0	0	4	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	377	80	10	487	190	50	110	254	0	40	150	50
Peak Hour Factor	0.8497	0.8497	0.8497	0.9162	0.9162	0.9162	0.8326	0.8326	0.8326	1.0000	0.941	0.941	0.941
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	111	24	3	133	52	15	33	76	0	11	40	13
Total Analysis Volume [veh/h]	185	444	94	11	532	207	60	132	305	0	42	159	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	32			62			86			124			
Bicycle Volume [bicycles/h]	1			14			14			39			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	77.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No					No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	62	62	1	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.62	0.62	0.01	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.23	0.07	0.01	0.28	0.14	0.51	0.20	0.38	0.04
s, saturation flow rate [veh/h]	1810	1900	1425	1810	1900	1441	379	1542	535	1212
c, Capacity [veh/h]	189	1185	889	24	1013	768	117	578	142	224
d1, Uniform Delay [s]	44.68	9.23	7.57	48.94	15.13	12.72	40.18	24.36	39.06	34.76
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.50	0.14	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.62	0.91	0.24	4.72	1.95	0.86	322.37	0.96	222.12	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

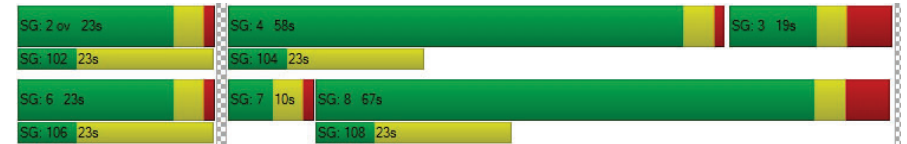
X, volume / capacity	0.98	0.37	0.11	0.45	0.53	0.27	1.64	0.53	1.41	0.24
d, Delay for Lane Group [s/veh]	59.30	10.13	7.81	53.66	17.07	13.58	362.55	25.32	261.18	34.96
Lane Group LOS	E	B	A	D	B	B	F	C	F	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.30	4.67	0.82	0.30	7.99	2.62	13.44	5.75	12.28	1.10
50th-Percentile Queue Length [ft/ln]	132.47	116.80	20.47	7.59	199.69	65.45	335.94	143.73	307.11	27.39
95th-Percentile Queue Length [veh/ln]	9.07	8.22	1.47	0.55	12.62	4.71	23.20	9.68	20.70	1.97
95th-Percentile Queue Length [ft/ln]	226.85	205.42	36.84	13.66	315.57	117.81	579.89	242.04	517.58	49.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.30	10.13	7.81	53.66	17.07	13.58	362.55	362.55	25.32	261.1	261.1	261.1	34.96
Movement LOS	E	B	A	D	B	B	F	F	C	F	F	F	C
d_A, Approach Delay [s/veh]	22.41			16.64			155.60			213.98			
Approach LOS	C			B			F			F			
d_I, Intersection Delay [s/veh]	72.11												
Intersection LOS	E												
Intersection V/C	0.944												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.303

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	460	250	220	570	160	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	5	0	11	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	474	255	220	581	160	120
Peak Hour Factor	0.9089	0.9089	0.8739	0.8739	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	70	63	166	45	34
Total Analysis Volume [veh/h]	522	281	252	665	180	135
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31		38		61	
Bicycle Volume [bicycles/h]	1		2		18	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	61	61	73	73	14	14	14
g / C, Green / Cycle	0.61	0.61	0.73	0.73	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.25	0.18	0.06	0.06	0.07
s, saturation flow rate [veh/h]	3618	1548	1015	3618	1691	1739	1430
c, Capacity [veh/h]	2204	943	783	2625	241	248	204
d1, Uniform Delay [s]	8.92	9.32	4.71	4.61	39.31	39.15	39.51
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	0.81	1.09	0.23	0.50	0.44	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

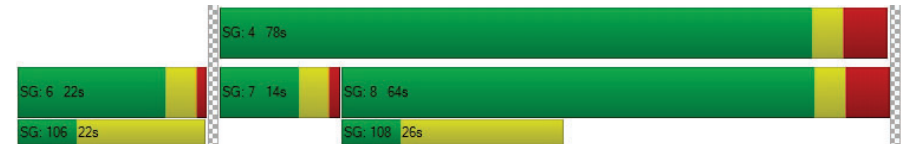
X, volume / capacity	0.24	0.30	0.32	0.25	0.46	0.43	0.49
d, Delay for Lane Group [s/veh]	9.17	10.13	5.80	4.85	39.82	39.58	40.18
Lane Group LOS	A	B	A	A	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.51	2.94	1.62	2.01	2.49	2.39	2.27
50th-Percentile Queue Length [ft/ln]	62.64	73.62	40.57	50.35	62.29	59.82	56.77
95th-Percentile Queue Length [veh/ln]	4.51	5.30	2.92	3.62	4.48	4.31	4.09
95th-Percentile Queue Length [ft/ln]	112.75	132.52	73.03	90.62	112.11	107.68	102.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.17	10.13	5.80	4.85	39.72	40.04
Movement LOS	A	B	A	A	D	D
d_A, Approach Delay [s/veh]	9.51		5.11		39.85	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	12.22					
Intersection LOS	B					
Intersection V/C	0.303					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 6.9
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.260

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	670	130	90	600	30	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	34	12	-1	0	-1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	689	164	102	599	30	39
Peak Hour Factor	0.9190	0.9190	0.9144	0.9144	0.7609	0.7609
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	187	45	28	164	10	13
Total Analysis Volume [veh/h]	750	178	112	655	39	51
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34		38		77	
Bicycle Volume [bicycles/h]	3		4		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	73	73	73	73	14
g / C, Green / Cycle	0.73	0.73	0.73	0.73	0.14
(v / s)_i Volume / Saturation Flow Rate	0.21	0.12	0.16	0.18	0.05
s, saturation flow rate [veh/h]	3618	1496	719	3618	1694
c, Capacity [veh/h]	2627	1087	524	2627	240
d1, Uniform Delay [s]	4.72	4.25	8.13	4.57	38.86
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.32	0.93	0.23	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

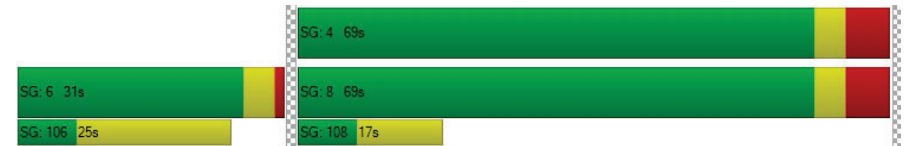
X, volume / capacity	0.29	0.16	0.21	0.25	0.38
d, Delay for Lane Group [s/veh]	4.99	4.57	9.06	4.80	39.22
Lane Group LOS	A	A	A	A	D
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.33	1.05	1.12	1.97	1.99
50th-Percentile Queue Length [ft/ln]	58.22	26.24	27.95	49.18	49.84
95th-Percentile Queue Length [veh/ln]	4.19	1.89	2.01	3.54	3.59
95th-Percentile Queue Length [ft/ln]	104.79	47.24	50.30	88.52	89.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.99	4.57	9.06	4.80	39.22	39.22
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	4.91		5.42		39.22	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	6.86					
Intersection LOS	A					
Intersection V/C	0.260					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.323

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	740	150	90	550	70	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	-4	-1	0	6	25
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	768	146	89	550	76	95
Peak Hour Factor	0.9233	0.9233	0.9315	0.9315	0.7866	0.7866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	208	40	24	148	24	30
Total Analysis Volume [veh/h]	832	158	96	590	97	121
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	78		64		77	
Bicycle Volume [bicycles/h]	5		4		17	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	64	64	78	78	9	22
g / C, Green / Cycle	0.64	0.64	0.78	0.78	0.09	0.22
(v / s)_i Volume / Saturation Flow Rate	0.23	0.11	0.12	0.16	0.07	0.08
s, saturation flow rate [veh/h]	3618	1484	834	3618	1378	1437
c, Capacity [veh/h]	2329	955	682	2804	128	322
d1, Uniform Delay [s]	8.23	7.10	3.35	3.02	44.25	32.85
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	0.37	0.43	0.17	3.44	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

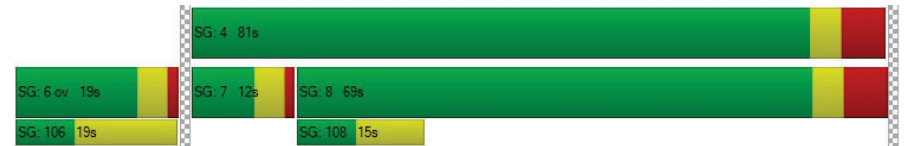
X, volume / capacity	0.36	0.17	0.14	0.21	0.76	0.38
d, Delay for Lane Group [s/veh]	8.66	7.47	3.78	3.19	47.69	33.12
Lane Group LOS	A	A	A	A	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.93	1.34	0.42	1.25	2.45	2.49
50th-Percentile Queue Length [ft/ln]	98.14	33.46	10.55	31.23	61.27	62.24
95th-Percentile Queue Length [veh/ln]	7.07	2.41	0.76	2.25	4.41	4.48
95th-Percentile Queue Length [ft/ln]	176.65	60.23	18.99	56.21	110.28	112.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.66	7.47	3.78	3.19	47.69	33.12
Movement LOS	A	A	A	A	D	C
d_A, Approach Delay [s/veh]	8.47		3.27		39.60	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	10.17					
Intersection LOS	B					
Intersection V/C	0.323					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 25.6
Level Of Service: C
Volume to Capacity (v/c): 0.380

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	20	820	142	67	590	10	20	13	10	100	20	130
Base Volume Input [veh/h]	20	820	142	67	590	10	20	13	10	100	20	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	0	0	6	0	0	0	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	835	142	67	596	10	20	13	10	100	20	139
Peak Hour Factor	0.9547	0.9547	0.8613	0.9469	0.9024	0.9024	0.6667	0.5455	0.6667	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	219	41	18	165	3	7	6	4	29	6	41
Total Analysis Volume [veh/h]	21	875	165	71	660	11	30	24	15	118	24	164
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			17		
Bicycle Volume [bicycles/h]	20			23			24			47		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	41.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	51	0	0	39	27	17	0	39	12	25	17
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	64	64	57	57	5	16	16
g / C, Green / Cycle	0.54	0.54	0.48	0.48	0.05	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.02	0.24	0.18	0.18	0.03	0.08	0.11
s, saturation flow rate [veh/h]	862	3618	1900	1886	1740	1824	1465
c, Capacity [veh/h]	458	1935	903	896	79	236	190
d1, Uniform Delay [s]	14.01	17.14	20.08	20.11	56.12	49.34	51.23
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	0.77	1.17	1.20	2.35	0.92	4.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

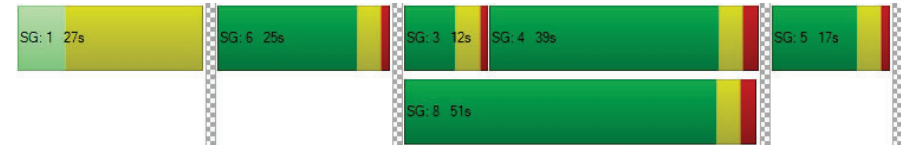
X, volume / capacity	0.05	0.45	0.37	0.37	0.57	0.60	0.86
d, Delay for Lane Group [s/veh]	14.03	17.90	21.26	21.31	58.47	50.26	55.76
Lane Group LOS	B	B	C	C	E	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.27	7.49	6.24	6.25	1.38	4.12	5.11
50th-Percentile Queue Length [ft/ln]	6.75	187.13	156.05	156.37	34.46	103.03	127.73
95th-Percentile Queue Length [veh/ln]	0.49	11.97	10.34	10.36	2.48	7.42	8.82
95th-Percentile Queue Length [ft/ln]	12.15	299.30	258.49	258.91	62.02	185.46	220.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.03	17.90	0.00	0.00	21.28	21.31	58.47	0.00	58.47	50.26	50.26	55.76
Movement LOS	B	B			C	C	E		E	D	D	E
d_A, Approach Delay [s/veh]	17.81		21.28			58.47		53.21				
Approach LOS	B		C			E		D				
d_I, Intersection Delay [s/veh]	25.63											
Intersection LOS	C											
Intersection V/C	0.380											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 24.6
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.444

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	470	780	690	30	60	460
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	6	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	470	795	696	30	60	460
Peak Hour Factor	0.9091	0.9091	0.9306	0.9306	0.8533	0.8533
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	129	219	187	8	18	135
Total Analysis Volume [veh/h]	517	875	748	32	70	539
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		0		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	71	71	71	25	24
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	80	80	80	6	30
g / C, Green / Cycle	0.16	0.67	0.67	0.67	0.05	0.25
(v / s)_i Volume / Saturation Flow Rate	0.15	0.24	0.21	0.02	0.04	0.20
s, saturation flow rate [veh/h]	3514	3618	3618	1615	1810	2668
c, Capacity [veh/h]	569	2423	2423	1082	96	677
d1, Uniform Delay [s]	49.37	8.63	8.25	6.68	55.90	41.86
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.37	0.42	0.33	0.05	3.86	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

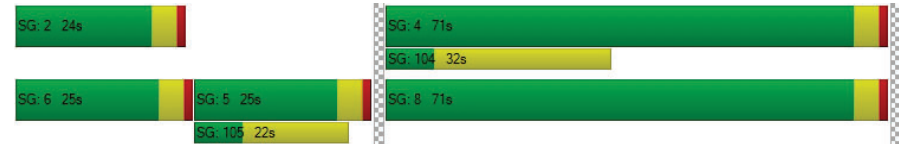
X, volume / capacity	0.91	0.36	0.31	0.03	0.73	0.80
d, Delay for Lane Group [s/veh]	51.74	9.05	8.58	6.73	59.76	42.69
Lane Group LOS	D	A	A	A	E	D
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.78	4.82	3.94	0.28	2.29	7.96
50th-Percentile Queue Length [ft/ln]	194.39	120.61	98.45	7.00	57.22	198.98
95th-Percentile Queue Length [veh/ln]	12.35	8.43	7.09	0.50	4.12	12.59
95th-Percentile Queue Length [ft/ln]	308.72	210.67	177.21	12.61	103.00	314.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.74	9.05	8.58	6.73	59.76	42.69
Movement LOS	D	A	A	A	E	D
d_A, Approach Delay [s/veh]	24.91		8.50		44.65	
Approach LOS	C		A		D	
d_I, Intersection Delay [s/veh]	24.63					
Intersection LOS	C					
Intersection V/C	0.444					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 20.5
Level Of Service: C
Volume to Capacity (v/c): 0.499

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd				
Base Volume Input [veh/h]	0	0	0	0	40	110	20	3	180	98	120	180	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	11	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	0	0	0	40	110	20	3	180	98	120	191	
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.9268	0.9268	0.9268	1.0000	0.9489	0.9471	0.9471	0.9471	
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	0	0	0	0	11	30	5	1	47	26	32	50	
Total Analysis Volume [veh/h]	0	0	0	0	43	119	22	3	190	103	127	202	
Presence of On-Street Parking					No				No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	12				27				48				
Bicycle Volume [bicycles/h]	10				7				36				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0	0
Maximum Green [s]	0	0	0	0	15	30	30	0	7	0	30	0	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0
Split [s]	0	0	0	0	19	35	43	0	12	0	35	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	0	0	0	22	13	0	0	0	20	0	0
Rest in Walk					No						No		
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0	0.0
Minimum Recall					No				Yes		No		
Maximum Recall					No				No		No		
Pedestrian Recall					No				No		No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	31	31	31
g / C, Green / Cycle	0.21	0.21	0.21	0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.03	0.04	0.04	0.13	0.07	0.13
s, saturation flow rate [veh/h]	1256	1900	1758	1440	1900	1518
c, Capacity [veh/h]	265	409	378	583	662	529
d1, Uniform Delay [s]	33.92	28.83	28.90	21.43	20.50	22.07
k, delay calibration	0.11	0.11	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.20	0.23	1.48	0.14	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.17	0.18	0.33	0.19	0.38
d, Delay for Lane Group [s/veh]	34.20	29.03	29.13	22.91	20.64	22.52
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.83	1.25	1.23	3.04	1.82	3.14
50th-Percentile Queue Length [ft/ln]	20.82	31.13	30.67	76.06	45.55	78.56
95th-Percentile Queue Length [veh/ln]	1.50	2.24	2.21	5.48	3.28	5.66
95th-Percentile Queue Length [ft/ln]	37.47	56.03	55.21	136.92	81.99	141.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	34.20	29.07	29.13	0.00	22.91	0.00	20.64	22.52
Movement LOS					C	C	C		C		C	C
d_A, Approach Delay [s/veh]	0.00				30.28				22.21			
Approach LOS	A				C				C			
d_I, Intersection Delay [s/veh]	20.45											
Intersection LOS	C											
Intersection V/C	0.499											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	1140	180	110	680	65	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	-1	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	1144	180	109	685	65	20
Peak Hour Factor	1.0000	0.9525	0.9525	0.9525	0.9353	0.9353	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	300	47	29	183	17	5
Total Analysis Volume [veh/h]	1	52	1201	189	117	732	69	21
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	46				31			
Bicycle Volume [bicycles/h]	10				12			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	30	30	15	30	0	30
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	24	35	19	43	0	35
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	22	0	13	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			Yes		No	Yes		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	50	50	50
g / C, Green / Cycle	0.45	0.45	0.45	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.07	0.33	0.12	0.17	0.20	0.20
s, saturation flow rate [veh/h]	719	3618	1537	674	1900	1875
c, Capacity [veh/h]	299	1610	684	356	1044	1030
d1, Uniform Delay [s]	23.47	20.77	15.82	14.58	11.41	11.42
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.26	3.20	1.00	2.45	0.98	0.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

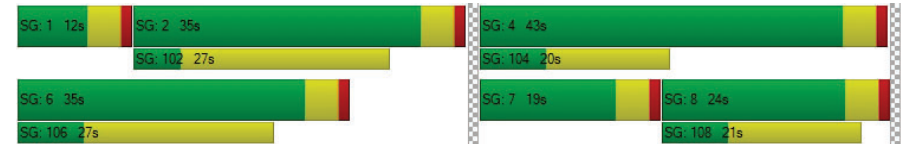
X, volume / capacity	0.17	0.75	0.28	0.33	0.36	0.36
d, Delay for Lane Group [s/veh]	24.74	23.96	16.82	17.04	12.38	12.41
Lane Group LOS	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.92	10.58	2.56	1.29	4.24	4.20
50th-Percentile Queue Length [ft/ln]	22.93	264.56	63.90	32.25	105.95	105.12
95th-Percentile Queue Length [veh/ln]	1.65	15.92	4.60	2.32	7.61	7.57
95th-Percentile Queue Length [ft/ln]	41.27	397.93	115.02	58.05	190.36	189.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.74	23.96	16.82	17.04	12.40	0.00	12.41
Movement LOS		C	C	B	B	B		B
d_A, Approach Delay [s/veh]	23.05			13.02				
Approach LOS	C			B				
d_I, Intersection Delay [s/veh]	20.45							
Intersection LOS	C							
Intersection V/C	0.499							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 36.0
 Level Of Service: D
 Volume to Capacity (v/c): 0.365

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	40	80	130	0	20	70	40	0	30	300	60	0	80	270	50
Base Volume Input [veh/h]	0	40	80	130	0	20	70	40	0	30	300	60	0	80	270	50
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	-1	0	0	0	0	0	0	5	0	0	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	40	80	129	0	20	70	40	0	30	305	60	0	84	270	50
Peak Hour Factor	1.000	0.924	0.924	0.924	1.000	0.803	0.803	0.803	1.000	0.662	0.662	0.662	1.000	0.962	0.962	0.962
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	11	22	35	0	6	22	12	0	11	115	23	0	22	70	13
Total Analysis Volume [veh/h]	0	43	87	139	0	25	87	50	0	45	460	91	0	87	281	52
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	307				0				6				14			
Bicycle Volume [bicycles/h]	1				8				9				31			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.24	0.04	0.13	0.06	0.09	0.09	0.09
s, saturation flow rate [veh/h]	1272	1699	680	1064	3618	1589	947	1900	1770
c, Capacity [veh/h]	73	263	140	491	1709	751	423	898	836
d1, Uniform Delay [s]	50.01	41.18	41.98	19.18	15.95	14.76	21.84	15.28	15.33
k, delay calibration	0.04	0.04	0.21	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.76	3.15	98.68	0.37	0.39	0.33	1.10	0.47	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

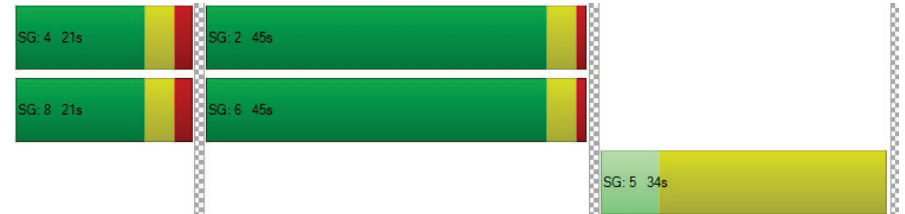
X, volume / capacity	0.59	0.86	1.16	0.09	0.27	0.12	0.21	0.19	0.20
d, Delay for Lane Group [s/veh]	52.77	44.33	140.66	19.55	16.33	15.09	22.94	15.75	15.86
Lane Group LOS	D	D	F	B	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.12	5.54	7.30	0.71	3.19	1.20	1.53	2.30	2.24
50th-Percentile Queue Length [ft/ln]	27.93	138.57	182.61	17.63	79.71	30.08	38.17	57.61	55.91
95th-Percentile Queue Length [veh/ln]	2.01	9.40	12.43	1.27	5.74	2.17	2.75	4.15	4.03
95th-Percentile Queue Length [ft/ln]	50.27	235.09	310.80	31.73	143.47	54.14	68.71	103.71	100.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.77	52.77	44.33	44.33	140.6	140.6	140.6	140.6	19.55	19.55	16.33	15.09	22.94	22.94	15.79	15.86
Movement LOS	D	D	D	D	F	F	F	F	B	B	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	45.68				140.66				16.39				17.28			
Approach LOS	D				F				B				B			
d_I, Intersection Delay [s/veh]	36.01															
Intersection LOS	D															
Intersection V/C	0.365															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.7
Level Of Service: C
Volume to Capacity (v/c): 0.359

Intersection Setup

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	0	30	170	60	0	30	100	60	0	80	80	30	0	30	60	120
Base Volume Input [veh/h]	0	30	170	60	0	30	100	60	0	80	80	30	0	30	60	120
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	21	0	-3	0	0	0	5	0	0	0	0	0	-1	30	-2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	51	170	57	0	30	100	65	0	80	80	30	0	29	90	118
Peak Hour Factor	1.000	0.828	0.828	0.828	1.000	0.834	0.834	0.834	1.000	0.885	0.885	0.885	1.000	0.872	0.872	0.872
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	15	51	17	0	9	30	19	0	23	23	8	0	8	26	34
Total Analysis Volume [veh/h]	0	62	205	69	0	36	120	78	0	90	90	34	0	33	103	135
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	257				0				18				7			
Bicycle Volume [bicycles/h]	11				5				23				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	0	0	0	4	4	0	2	2	2	0	0	6	0
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	-	-	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0
Maximum Green [s]	0	30	30	0	0	0	30	30	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	3.6	0.0
All red [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	35	35	0	0	0	35	35	0	38	38	38	0	0	38	0
Vehicle Extension [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0
Pedestrian Clearance [s]	0	13	13	0	0	0	13	13	0	16	16	16	0	0	16	0
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	2.6	2.6	2.6	0.0	0.0	2.6	0.0
Minimum Recall			Yes				Yes			No					No	
Maximum Recall			No				No			No					No	
Pedestrian Recall			No				No			No					No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	20	20	20	20	20	50	50
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.04	0.03	0.11	0.17	0.25
s, saturation flow rate [veh/h]	1203	1900	1550	1196	1754	1249	1100
c, Capacity [veh/h]	161	383	313	167	354	671	586
d1, Uniform Delay [s]	45.21	35.70	33.34	43.72	35.91	15.73	16.85
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	0.43	0.13	0.24	0.52	1.25	2.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.53	0.22	0.22	0.56	0.32	0.46
d, Delay for Lane Group [s/veh]	45.77	36.14	33.47	43.96	36.42	16.99	19.46
Lane Group LOS	D	D	C	D	D	B	B
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.50	4.43	1.39	0.85	4.31	3.21	4.42
50th-Percentile Queue Length [ft/ln]	37.60	110.72	34.72	21.14	107.70	80.14	110.42
95th-Percentile Queue Length [veh/ln]	2.71	7.88	2.50	1.52	7.71	5.77	7.86
95th-Percentile Queue Length [ft/ln]	67.68	197.01	62.49	38.05	192.80	144.25	196.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.77	45.77	36.14	33.47	43.96	43.96	36.42	36.42	16.99	16.99	16.99	16.99	19.46	19.46	19.46	19.46
Movement LOS	D	D	D	C	D	D	D	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	37.37				37.58				16.99				19.46			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	28.68															
Intersection LOS	C															
Intersection V/C	0.359															

Sequence

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



Intersection Level Of Service Report

Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 31.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.355

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	50	210	90	40	90	30	70	130	40	30	110	140
Base Volume Input [veh/h]	50	210	90	40	90	30	70	130	40	30	110	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	8	-3	38	29	35	-1	-10	-3	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	218	87	78	119	65	69	120	37	30	112	146
Peak Hour Factor	0.8868	0.8868	0.8868	0.7663	0.7663	0.7663	0.9649	0.9649	0.9649	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	61	25	25	39	21	18	31	10	8	31	40
Total Analysis Volume [veh/h]	55	246	98	102	155	85	72	124	38	33	123	160
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	425			0			24			8		
Bicycle Volume [bicycles/h]	3			6			42			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	83.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.11	0.09	0.14	0.22	0.02	0.15	0.10
s, saturation flow rate [veh/h]	1158	1900	900	1152	1766	896	1566	1034	1584
c, Capacity [veh/h]	130	370	175	137	344	500	787	563	796
d1, Uniform Delay [s]	47.35	37.24	36.38	48.16	37.52	22.02	12.66	15.86	13.75
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.81	0.77	1.04	2.97	0.97	2.31	0.12	1.22	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

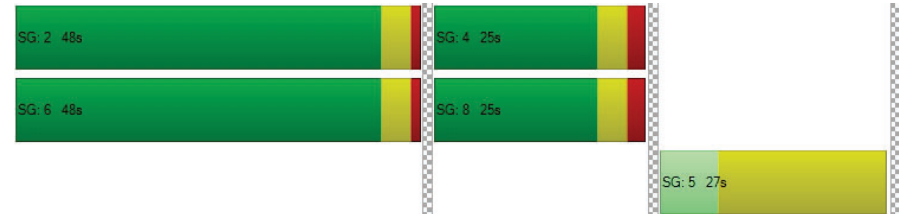
X, volume / capacity	0.42	0.67	0.56	0.74	0.70	0.39	0.05	0.28	0.20
d, Delay for Lane Group [s/veh]	48.16	38.01	37.42	51.13	38.48	24.32	12.78	17.08	14.31
Lane Group LOS	D	D	D	D	D	C	B	B	B
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.37	5.52	2.17	2.63	5.44	4.14	0.45	2.04	2.07
50th-Percentile Queue Length [ft/ln]	34.33	138.08	54.23	65.71	136.07	103.54	11.25	51.11	51.67
95th-Percentile Queue Length [veh/ln]	2.47	9.38	3.90	4.73	9.27	7.45	0.81	3.68	3.72
95th-Percentile Queue Length [ft/ln]	61.80	234.43	97.62	118.27	231.72	186.37	20.26	92.00	93.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.16	38.01	37.42	51.13	38.48	38.48	24.32	24.32	12.78	17.08	17.08	14.31
Movement LOS	D	D	D	D	D	D	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	39.27			42.25			22.45			15.68		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	31.24											
Intersection LOS	C											
Intersection V/C	0.355											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 26.8
Level Of Service: C
Volume to Capacity (v/c): 0.282

Intersection Setup

Name	2nd St				2nd St				Broadway				Br			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Broadway				Br			
	Base Volume Input [veh/h]	0	30	267	80	0	40	100	10	0	80	110	50	0	60	110
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	0	0	4	21	0	0	-1	0	0	0	0	0	-6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	30	267	80	0	44	121	10	0	79	110	50	0	60	110	144
Peak Hour Factor	1.000	0.863	0.863	0.863	1.000	0.856	0.856	0.856	1.000	0.889	0.889	0.889	1.000	0.776	0.776	0.776
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	9	77	23	0	13	35	3	0	22	31	14	0	19	35	46
Total Analysis Volume [veh/h]	0	35	309	93	0	51	141	12	0	89	124	56	0	77	142	185
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	466				0				17				14			
Bicycle Volume [bicycles/h]	14				37				53				22			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	80.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	2	8	2	0	6	4	6	0	4	2	4	0	8	6	8	
Auxiliary Signal Groups																	
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7	
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30	
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	
All red [s]	0.0	1.0	2.0	1.0	0.0	1.0	2.0	1.0	0.0	2.0	1.0	2.0	0.0	2.0	1.0	2.0	
Split [s]	0	41	30	41	0	41	30	41	0	30	41	30	0	30	41	30	
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7	
Pedestrian Clearance [s]	0	10	12	10	0	10	10	10	0	10	10	10	0	12	10	12	
Rest in Walk																	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	
I2, Clearance Lost Time [s]	0.0	2.6	3.6	2.6	0.0	2.6	3.6	2.6	0.0	3.6	2.6	3.6	0.0	3.6	2.6	3.6	
Minimum Recall			No			No				Yes				Yes			
Maximum Recall			No			No				No				No			
Pedestrian Recall			No			No				No				No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	44	44	44	44	44
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.44	0.44	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.03	0.16	0.06	0.05	0.08	0.07	0.10	0.06	0.07	0.12
s, saturation flow rate [veh/h]	1254	1900	1547	1087	1866	1266	1776	1223	1900	1553
c, Capacity [veh/h]	254	447	364	142	439	552	786	514	841	688
d1, Uniform Delay [s]	37.58	34.92	31.12	45.89	31.86	20.75	17.28	21.78	16.78	17.63
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.09	0.72	0.14	0.56	0.18	0.63	0.68	0.62	0.43	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

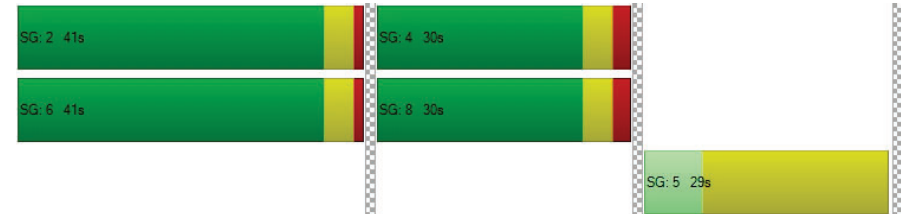
X, volume / capacity	0.14	0.69	0.26	0.36	0.35	0.16	0.23	0.15	0.17	0.27
d, Delay for Lane Group [s/veh]	37.67	35.65	31.25	46.45	32.03	21.37	17.96	22.39	17.22	18.59
Lane Group LOS	D	D	C	D	C	C	B	C	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.75	6.78	1.81	1.25	3.04	1.45	2.63	1.29	2.00	2.78
50th-Percentile Queue Length [ft/ln]	18.72	169.44	45.18	31.14	76.05	36.26	65.68	32.28	50.02	69.58
95th-Percentile Queue Length [veh/ln]	1.35	11.05	3.25	2.24	5.48	2.61	4.73	2.32	3.60	5.01
95th-Percentile Queue Length [ft/ln]	33.70	276.17	81.32	56.05	136.90	65.28	118.23	58.11	90.04	125.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.67	37.67	35.65	31.25	46.45	46.45	32.03	32.03	21.37	21.37	17.96	17.96	22.39	22.39	17.22	18.59
Movement LOS	D	D	D	C	D	D	C	C	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	34.87			35.64			19.09			18.83						
Approach LOS	C			D			B			B						
d_I, Intersection Delay [s/veh]	26.83															
Intersection LOS	C															
Intersection V/C	0.282															

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 35.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.300

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	20	290	0	29	120	50	66	90	0	20	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	21	0	0	0	0	0	9	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	294	0	29	141	50	66	90	0	20	179	153
Peak Hour Factor	0.8824	0.8824	1.0000	0.9439	0.9737	0.9737	0.8321	0.8321	1.0000	0.9017	0.9017	0.9017
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	83	0	8	36	13	20	27	0	6	50	42
Total Analysis Volume [veh/h]	23	333	0	31	145	51	79	108	0	22	199	170
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	295			0			8			32		
Bicycle Volume [bicycles/h]	6			27			58			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	67	67
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.02	0.18	0.08	0.03	0.11	0.12
s, saturation flow rate [veh/h]	1238	1863	1863	1546	1890	1452
c, Capacity [veh/h]	196	361	361	299	1062	816
d1, Uniform Delay [s]	48.41	47.44	42.25	40.29	12.97	13.09
k, delay calibration	0.04	0.10	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	9.31	0.27	0.10	0.43	0.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.92	0.40	0.17	0.20	0.22
d, Delay for Lane Group [s/veh]	48.51	56.75	42.51	40.39	13.39	13.69
Lane Group LOS	D	E	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.63	10.65	3.76	1.26	3.01	2.53
50th-Percentile Queue Length [ft/ln]	15.81	266.27	93.99	31.50	75.28	63.37
95th-Percentile Queue Length [veh/ln]	1.14	16.00	6.77	2.27	5.42	4.56
95th-Percentile Queue Length [ft/ln]	28.47	400.08	169.18	56.71	135.51	114.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.51	56.75	0.00	0.00	42.51	40.39	0.00	0.00	0.00	13.39	13.40	13.69
Movement LOS	D	E			D	D				B	B	B
d_A, Approach Delay [s/veh]	56.22		41.96		0.00		13.53					
Approach LOS	E		D		A		B					
d_I, Intersection Delay [s/veh]	35.55											
Intersection LOS	D											
Intersection V/C	0.300											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 25.3
Level Of Service: C
Volume to Capacity (v/c): 0.553

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	80	540	130	60	90	30	130	240	40	200	390	140
Base Volume Input [veh/h]	80	540	130	60	90	30	130	240	40	200	390	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	10	4	0	0	-1	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	544	130	70	94	30	130	239	40	200	401	140
Peak Hour Factor	0.9461	0.9461	0.9461	0.8385	0.8385	0.8385	0.9433	0.9433	0.9433	0.9598	0.9598	0.9598
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	144	34	21	28	9	34	63	11	52	104	36
Total Analysis Volume [veh/h]	85	575	137	83	112	36	138	253	42	208	418	146
Presence of On-Street Parking	No		No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes		No	Yes		No	Yes		No	Yes	
Maximum Recall		No		No	No		No	No		No	No	
Pedestrian Recall		No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	41	41	41	50	50	50	31	16	16	31	19	19
g / C, Green / Cycle	0.46	0.46	0.46	0.56	0.56	0.56	0.34	0.18	0.18	0.34	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.07	0.30	0.09	0.08	0.06	0.02	0.13	0.08	0.09	0.15	0.15	0.17
s, saturation flow rate [veh/h]	1285	1900	1549	985	1900	1570	1067	1900	1676	1387	1900	1605
c, Capacity [veh/h]	600	871	710	463	1061	877	428	343	302	509	405	342
d1, Uniform Delay [s]	17.10	18.96	14.50	12.17	9.33	8.99	22.65	32.85	33.12	22.52	32.99	33.51
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.29	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	3.92	0.61	0.85	0.20	0.09	0.16	0.33	0.44	1.39	0.94	1.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

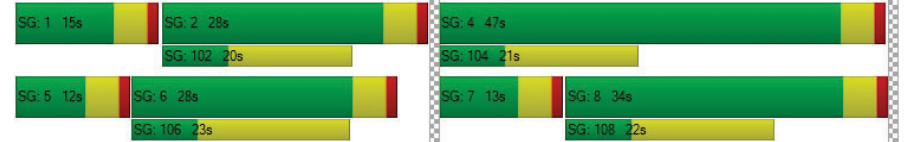
X, volume / capacity	0.14	0.66	0.19	0.18	0.11	0.04	0.32	0.44	0.48	0.41	0.73	0.79
d, Delay for Lane Group [s/veh]	17.59	22.88	15.11	13.01	9.53	9.08	22.81	33.18	33.56	23.91	33.93	35.05
Lane Group LOS	B	C	B	B	A	A	C	C	C	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.15	9.54	1.69	0.80	1.00	0.31	2.03	2.87	2.80	3.35	5.88	5.52
50th-Percentile Queue Length [ft/ln]	28.83	238.50	42.14	19.95	25.04	7.83	50.63	71.66	69.94	83.82	146.96	137.96
95th-Percentile Queue Length [veh/ln]	2.08	14.61	3.03	1.44	1.80	0.56	3.65	5.16	5.04	6.04	9.85	9.37
95th-Percentile Queue Length [ft/ln]	51.89	365.14	75.85	35.91	45.07	14.10	91.13	128.99	125.90	150.88	246.37	234.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.59	22.88	15.11	13.01	9.53	9.08	22.81	33.33	33.56	23.91	34.26	35.05
Movement LOS	B	C	B	B	A	A	C	C	C	C	C	D
d_A, Approach Delay [s/veh]	20.98		10.71			30.00			31.62			
Approach LOS	C		B			C			C			
d_I, Intersection Delay [s/veh]	25.34											
Intersection LOS	C											
Intersection V/C	0.553											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.288

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	50	130	60	60	210	30	40	360	60	120	420	150
Base Volume Input [veh/h]	50	130	60	60	210	30	40	360	60	120	420	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	5	-1	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	130	60	60	210	30	40	365	59	120	424	150
Peak Hour Factor	0.7703	0.7703	0.7703	0.9300	0.9300	0.9300	0.9229	0.9229	0.9229	0.9545	0.9545	0.9545
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	42	19	16	56	8	11	99	16	31	111	39
Total Analysis Volume [veh/h]	65	169	78	65	226	32	43	395	64	126	444	157
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	363			0			4			8		
Bicycle Volume [bicycles/h]	9			5			7			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.05	0.05	0.12	0.02	0.05	0.11	0.04	0.11	0.16	0.17
s, saturation flow rate [veh/h]	1173	1900	1579	1236	1900	1586	831	3618	1588	1178	1900	1705
c, Capacity [veh/h]	148	368	306	190	368	308	233	1190	522	545	844	758
d1, Uniform Delay [s]	46.41	35.75	34.26	43.30	36.97	33.24	34.36	25.34	23.52	17.05	18.53	18.61
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.76	0.33	0.16	0.40	0.62	0.05	1.74	0.75	0.48	0.08	1.25	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

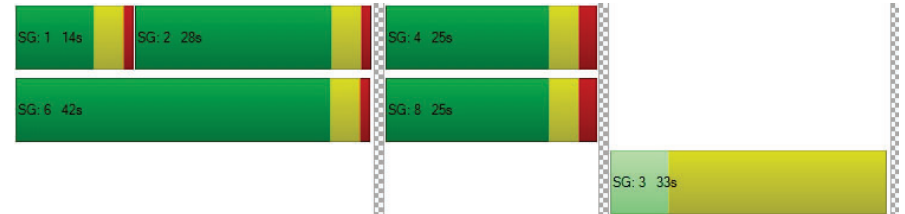
X, volume / capacity	0.44	0.46	0.25	0.34	0.61	0.10	0.18	0.33	0.12	0.23	0.37	0.38
d, Delay for Lane Group [s/veh]	47.17	36.08	34.42	43.70	37.59	33.29	36.10	26.09	24.00	17.13	19.78	20.06
Lane Group LOS	D	D	C	D	D	C	D	C	C	B	B	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.61	3.62	1.60	1.53	5.02	0.64	1.00	3.62	1.12	1.71	5.01	4.65
50th-Percentile Queue Length [ft/ln]	40.19	90.39	39.95	38.35	125.40	15.88	24.96	90.47	28.03	42.87	125.35	116.33
95th-Percentile Queue Length [veh/ln]	2.89	6.51	2.88	2.76	8.69	1.14	1.80	6.51	2.02	3.09	8.69	8.19
95th-Percentile Queue Length [ft/ln]	72.33	162.70	71.91	69.03	217.23	28.58	44.92	162.85	50.45	77.17	217.16	204.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.17	36.08	34.42	43.70	37.59	33.29	36.10	26.09	24.00	17.13	19.86	20.06
Movement LOS	D	D	C	D	D	C	D	C	C	B	B	C
d_A, Approach Delay [s/veh]	37.98			38.39			26.68			19.43		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	27.77											
Intersection LOS	C											
Intersection V/C	0.288											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.2
Level Of Service: C
Volume to Capacity (v/c): 0.321

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	50	220	50	20	280	40	10	90	50	40	150	60
Base Volume Input [veh/h]	50	220	50	20	280	40	10	90	50	40	150	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	-3	2	0	-1	-2	0	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	220	50	20	277	42	10	89	48	40	170	60
Peak Hour Factor	0.8912	0.8912	0.8912	0.9148	0.9148	0.9148	0.8274	0.8274	0.8274	0.8393	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	62	14	5	76	11	3	27	15	12	51	18
Total Analysis Volume [veh/h]	63	247	56	22	303	46	12	108	58	48	203	71
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	276			0			17			7		
Bicycle Volume [bicycles/h]	20			10			12			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	34.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	40	40	40	40	0	0	30	0	30	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	47	47	47	47	47	47	21	21
g / C, Green / Cycle	0.47	0.47	0.47	0.47	0.47	0.47	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.04	0.02	0.09	0.10	0.10	0.19
s, saturation flow rate [veh/h]	1048	1900	1557	1151	1900	1799	1714	1687
c, Capacity [veh/h]	482	893	732	495	893	845	394	391
d1, Uniform Delay [s]	19.71	16.14	14.57	20.37	15.49	15.53	34.89	38.70
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.21
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	0.77	0.20	0.17	0.50	0.54	0.30	8.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

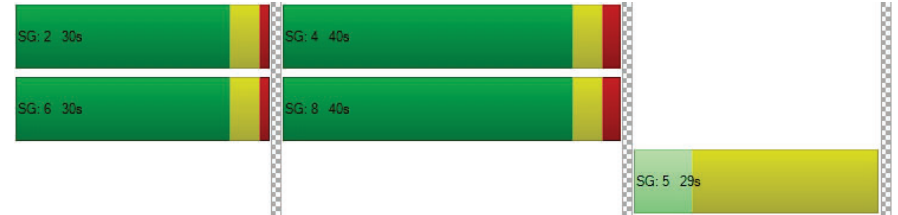
X, volume / capacity	0.13	0.28	0.08	0.04	0.20	0.20	0.45	0.82
d, Delay for Lane Group [s/veh]	20.27	16.91	14.77	20.54	15.99	16.07	35.19	46.75
Lane Group LOS	C	B	B	C	B	B	D	D
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.00	3.49	0.72	0.35	2.39	2.34	3.81	8.39
50th-Percentile Queue Length [ft/ln]	25.01	87.24	17.91	8.69	59.79	58.43	95.33	209.83
95th-Percentile Queue Length [veh/ln]	1.80	6.28	1.29	0.63	4.30	4.21	6.86	13.14
95th-Percentile Queue Length [ft/ln]	45.02	157.04	32.24	15.64	107.62	105.18	171.60	328.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.27	16.91	14.77	20.54	16.02	16.07	35.19	35.19	35.19	46.75	46.75	46.75
Movement LOS	C	B	B	C	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	17.16		16.30		35.19		46.75					
Approach LOS	B		B		D		D					
d_I, Intersection Delay [s/veh]	27.20											
Intersection LOS	C											
Intersection V/C	0.321											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.310

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	50	300	80	40	330	10	0	180	70	0	210
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	4	0	0	-4	-1	0	24	2	0	7	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	304	80	40	326	9	0	204	72	0	217	52
Peak Hour Factor	0.8402	0.8402	0.8402	0.9000	0.9000	0.9000	1.0000	0.8977	0.8977	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	90	24	11	91	3	0	57	20	0	57	14
Total Analysis Volume [veh/h]	62	362	95	44	362	10	0	227	80	0	229	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	398			0			16			7		
Bicycle Volume [bicycles/h]	13			9			11			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	56	56	56	56	56	56	14	14	14	14
g / C, Green / Cycle	0.56	0.56	0.56	0.56	0.56	0.56	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.06	0.04	0.10	0.10	0.12	0.05	0.07	0.08
s, saturation flow rate [veh/h]	1026	1900	1587	1036	1900	1880	1900	1567	1900	1759
c, Capacity [veh/h]	568	1060	885	513	1060	1049	265	219	265	246
d1, Uniform Delay [s]	14.23	12.08	10.40	17.21	10.84	10.85	42.02	38.99	39.99	40.25
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.88	0.24	0.33	0.36	0.37	3.08	0.38	0.62	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

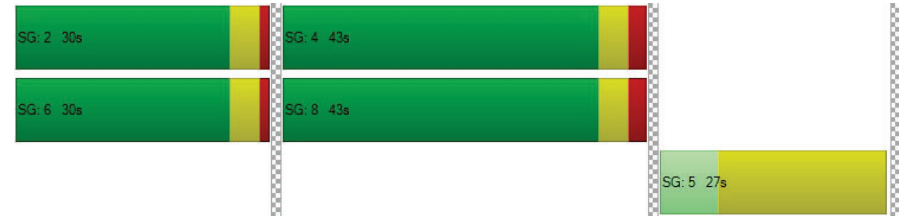
X, volume / capacity	0.11	0.34	0.11	0.09	0.18	0.18	0.86	0.37	0.54	0.58
d, Delay for Lane Group [s/veh]	14.62	12.96	10.65	17.54	11.21	11.22	45.10	39.37	40.61	41.05
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.80	4.35	0.99	0.64	2.00	1.99	5.65	1.79	3.27	3.30
50th-Percentile Queue Length [ft/ln]	20.07	108.86	24.64	15.90	50.04	49.78	141.13	44.87	81.79	82.53
95th-Percentile Queue Length [veh/ln]	1.45	7.78	1.77	1.14	3.60	3.58	9.54	3.23	5.89	5.94
95th-Percentile Queue Length [ft/ln]	36.13	194.42	44.35	28.62	90.08	89.60	238.54	80.77	147.22	148.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.62	12.96	10.65	17.54	11.21	11.22	0.00	45.10	39.37	0.00	40.78	41.05
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	12.73			11.88			43.60			40.83		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.94											
Intersection LOS	C											
Intersection V/C	0.310											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 34.8
Level Of Service: C
Volume to Capacity (v/c): 0.398

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	130	410	170	20	290	50	0	160	50	110	220	50
Base Volume Input [veh/h]	130	410	170	20	290	50	0	160	50	110	220	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	6	0	0	-1	-1	0	0	4	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	128	416	170	20	289	49	0	160	54	110	217	50
Peak Hour Factor	0.9144	0.9144	0.9144	0.9709	0.9709	0.9709	1.0000	0.9118	0.9118	0.8866	0.8866	0.8866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	114	46	5	74	13	0	44	15	31	61	14
Total Analysis Volume [veh/h]	140	455	186	21	298	50	0	175	59	124	245	56
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	516			0			19			11		
Bicycle Volume [bicycles/h]	29			44			5			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	11	55	55	63	47	47	13	29	25	25	25
g / C, Green / Cycle	0.09	0.45	0.45	0.52	0.39	0.39	0.11	0.24	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.08	0.24	0.12	0.02	0.09	0.10	0.09	0.04	0.08	0.13	0.04
s, saturation flow rate [veh/h]	1810	1900	1573	1036	1900	1785	1900	1588	1461	1900	1590
c, Capacity [veh/h]	168	863	714	461	743	698	207	382	287	398	333
d1, Uniform Delay [s]	53.53	23.51	20.28	15.81	24.55	24.63	52.49	35.98	40.82	43.10	38.91
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.04	2.30	0.88	0.19	0.75	0.84	3.60	0.07	1.07	0.58	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

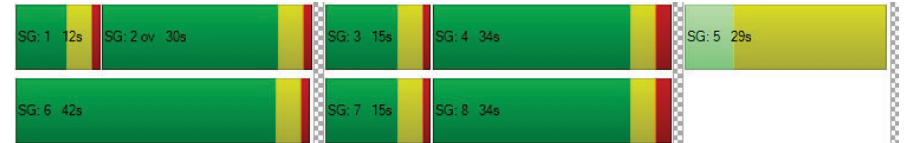
X, volume / capacity	0.83	0.53	0.26	0.05	0.24	0.25	0.84	0.15	0.43	0.62	0.17
d, Delay for Lane Group [s/veh]	57.57	25.81	21.17	16.00	25.30	25.46	56.09	36.05	41.89	43.68	39.00
Lane Group LOS	E	C	C	B	C	C	E	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.31	9.57	3.35	0.30	3.50	3.42	5.38	1.38	3.18	6.61	1.36
50th-Percentile Queue Length [ft/ln]	107.63	239.16	83.85	7.40	87.60	85.46	134.47	34.57	79.57	165.21	33.96
95th-Percentile Queue Length [veh/ln]	7.71	14.64	6.04	0.53	6.31	6.15	9.18	2.49	5.73	10.82	2.45
95th-Percentile Queue Length [ft/ln]	192.70	365.97	150.94	13.31	157.68	153.83	229.56	62.23	143.22	270.60	61.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.57	25.81	21.17	16.00	25.37	25.46	0.00	56.09	36.05	41.89	43.68	39.00
Movement LOS	E	C	C	B	C	C		E	D	D	D	D
d_A, Approach Delay [s/veh]	30.40			24.85			51.03			42.54		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.79											
Intersection LOS	C											
Intersection V/C	0.398											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 16.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.304

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	270	720	0	0	400	30	181	0	84	100	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	4	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	282	724	0	0	403	30	181	0	84	100	80	40
Peak Hour Factor	0.8612	0.8612	1.0000	1.0000	0.9000	0.9000	0.8717	1.0000	0.8717	0.9130	0.9130	0.9130
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	210	0	0	112	8	52	0	24	27	22	11
Total Analysis Volume [veh/h]	327	841	0	0	448	33	208	0	96	110	88	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	722			0			156			3		
Bicycle Volume [bicycles/h]	7			56			7			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8	
Auxiliary Signal Groups									3				
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7	
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40	
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6	
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0	
Split [s]	22	71	0	0	49	20	29	0	22	0	20	71	
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7	
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17	
Rest in Walk													
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6	
Minimum Recall	No	Yes			Yes						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	80	80	64	64	11	11
g / C, Green / Cycle	0.67	0.67	0.54	0.54	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.30	0.23	0.13	0.13	0.07	0.07
s, saturation flow rate [veh/h]	1081	3618	1900	1844	1821	1604
c, Capacity [veh/h]	742	2415	1017	987	162	143
d1, Uniform Delay [s]	8.62	8.65	14.83	14.90	53.54	53.63
k, delay calibration	0.25	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.95	0.40	0.55	0.59	3.14	3.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

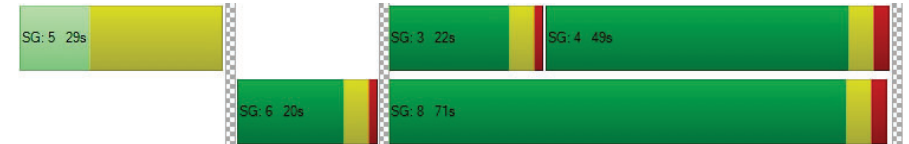
X, volume / capacity	0.44	0.35	0.24	0.24	0.78	0.80
d, Delay for Lane Group [s/veh]	9.56	9.04	15.38	15.48	56.68	57.56
Lane Group LOS	A	A	B	B	E	E
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.47	4.62	3.56	3.58	3.94	3.58
50th-Percentile Queue Length [ft/ln]	86.64	115.56	88.90	89.43	98.40	89.47
95th-Percentile Queue Length [veh/ln]	6.24	8.15	6.40	6.44	7.08	6.44
95th-Percentile Queue Length [ft/ln]	155.95	203.72	160.03	160.97	177.11	161.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.56	9.04	0.00	0.00	15.43	15.48	0.00	0.00	0.00	56.68	57.39	57.56
Movement LOS	A	A			B	B				E	E	E
d_A, Approach Delay [s/veh]	9.19		15.43		0.00		57.10					
Approach LOS	A		B		A		E					
d_I, Intersection Delay [s/veh]	16.91											
Intersection LOS	B											
Intersection V/C	0.304											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 42.0
Level Of Service: D
Volume to Capacity (v/c): 0.720

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		850	540
	Northbound		Southbound			
Base Volume Input [veh/h]	430	0	0	580	850	540
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	0	3	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	429	0	0	583	850	556
Peak Hour Factor	0.9052	1.0000	1.0000	0.8323	0.9608	0.9608
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	0	0	175	221	145
Total Analysis Volume [veh/h]	474	0	0	700	885	579
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	42.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	45	0	0	45	45	45
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	40
g / C, Green / Cycle	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.35	0.53
s, saturation flow rate [veh/h]	3618	3618	2500	1100
c, Capacity [veh/h]	1628	1628	1119	492
d1, Uniform Delay [s]	15.65	16.86	21.22	24.82
k, delay calibration	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	0.83	0.48	98.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

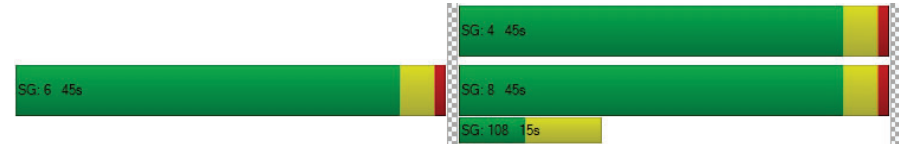
X, volume / capacity	0.29	0.43	0.79	1.18
d, Delay for Lane Group [s/veh]	16.10	17.69	21.70	123.46
Lane Group LOS	B	B	C	F
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.07	4.91	6.76	22.20
50th-Percentile Queue Length [ft/ln]	76.69	122.65	169.06	555.00
95th-Percentile Queue Length [veh/ln]	5.52	8.54	11.03	33.34
95th-Percentile Queue Length [ft/ln]	138.04	213.46	275.67	833.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.10	0.00	0.00	17.69	21.70	123.46
Movement LOS	B			B	C	F
d_A, Approach Delay [s/veh]	16.10		17.69		61.95	
Approach LOS	B		B		E	
d_I, Intersection Delay [s/veh]			41.97			
Intersection LOS			D			
Intersection V/C			0.720			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 41.1
Level Of Service: D
Volume to Capacity (v/c): 0.577

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	30	390	440	280	830	210	50	540	70	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-1	0	3	0	0	0	9	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	389	440	283	830	210	50	549	70	0	0	0
Peak Hour Factor	0.8933	0.8933	0.8933	0.9143	0.9143	0.9143	0.7752	0.7752	0.7752	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	109	123	77	227	57	16	177	23	0	0	0
Total Analysis Volume [veh/h]	34	435	493	310	908	230	64	708	90	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			109			47		
Bicycle Volume [bicycles/h]	0			2			13			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	12	36	36	25	49	49	29	29	29	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	No		No	Yes			No			
Maximum Recall	No	Yes		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	25	25	34	56	56	17	17	17
g / C, Green / Cycle	0.03	0.28	0.28	0.38	0.62	0.62	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.32	0.09	0.31	0.33	0.16	0.16	0.17
s, saturation flow rate [veh/h]	1810	1900	1533	3514	1900	1679	1881	1729	1616
c, Capacity [veh/h]	59	528	426	1324	1181	1044	361	332	310
d1, Uniform Delay [s]	42.90	30.44	32.50	19.17	9.30	9.60	35.14	35.12	35.26
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.22	13.63	94.27	0.03	1.48	1.93	2.27	2.43	2.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.82	1.16	0.23	0.49	0.53	0.85	0.85	0.87
d, Delay for Lane Group [s/veh]	46.12	44.07	126.76	19.20	10.78	11.53	37.40	37.56	38.22
Lane Group LOS	D	D	F	B	B	B	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.79	10.56	20.10	2.16	6.02	5.97	6.54	6.01	5.80
50th-Percentile Queue Length [ft/ln]	19.78	283.93	502.45	54.09	150.49	149.33	163.44	150.36	144.91
95th-Percentile Queue Length [veh/ln]	1.42	15.89	29.86	3.89	10.04	9.98	10.73	10.04	9.74
95th-Percentile Queue Length [ft/ln]	35.61	397.14	746.40	97.37	251.08	249.53	268.28	250.91	243.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.12	44.07	126.76	19.20	11.05	11.53	37.40	37.67	38.22	0.00	0.00	0.00
Movement LOS	D	D	F	B	B	B	D	D	D			
d_A, Approach Delay [s/veh]	86.52			12.87			37.71			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	41.07											
Intersection LOS	D											
Intersection V/C	0.577											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 16.8
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.291

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	140	110	120	60	80	10	20	440	20	70	560	40
Base Volume Input [veh/h]	140	110	120	60	80	10	20	440	20	70	560	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	0	0	0	0	5	0	1	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	110	125	60	80	10	20	445	20	71	565	40
Peak Hour Factor	0.9659	0.9659	0.9659	0.8023	0.8023	0.8023	0.9311	0.9311	0.9311	0.9371	0.9371	0.9371
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	28	32	19	25	3	5	119	5	19	151	11
Total Analysis Volume [veh/h]	145	114	129	75	100	12	21	478	21	76	603	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			88			39			23		
Bicycle Volume [bicycles/h]	7			9			2			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	22	64	64	64	64	64	64
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.12	0.06	0.08	0.06	0.06	0.03	0.13	0.01	0.08	0.17	0.17
s, saturation flow rate [veh/h]	1253	1900	1536	1270	1847	788	3618	1538	921	1900	1828
c, Capacity [veh/h]	263	427	345	266	415	505	2327	989	597	1222	1176
d1, Uniform Delay [s]	40.63	31.95	32.79	38.13	31.97	10.44	7.33	6.45	10.07	7.68	7.71
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.68	0.12	0.25	0.21	0.13	0.15	0.20	0.04	0.44	0.54	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

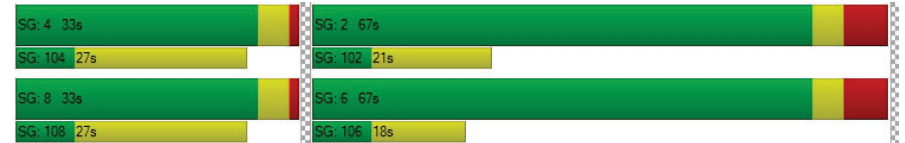
X, volume / capacity	0.55	0.27	0.37	0.28	0.27	0.04	0.21	0.02	0.13	0.27	0.27
d, Delay for Lane Group [s/veh]	41.31	32.07	33.03	38.34	32.10	10.59	7.53	6.49	10.51	8.22	8.28
Lane Group LOS	D	C	C	D	C	B	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.40	2.25	2.62	1.64	2.21	0.23	2.00	0.16	0.82	2.95	2.90
50th-Percentile Queue Length [ft/ln]	85.02	56.22	65.45	41.09	55.28	5.74	49.94	4.01	20.56	73.74	72.59
95th-Percentile Queue Length [veh/ln]	6.12	4.05	4.71	2.96	3.98	0.41	3.60	0.29	1.48	5.31	5.23
95th-Percentile Queue Length [ft/ln]	153.04	101.19	117.82	73.96	99.51	10.33	89.89	7.21	37.02	132.74	130.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.31	32.07	33.03	38.34	32.10	32.10	10.59	7.53	6.49	10.51	8.25	8.28
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	35.84			34.60			7.61			8.49		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	16.77											
Intersection LOS	B											
Intersection V/C	0.291											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 20.1
Level Of Service: C
Volume to Capacity (v/c): 0.298

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	90	290	50	20	120	30	10	140	20	30	160	70
Base Volume Input [veh/h]	90	290	50	20	120	30	10	140	20	30	160	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	5	0	0	0	1	0	-1	0	0	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	295	50	20	120	31	10	139	20	30	174	70
Peak Hour Factor	0.8947	0.8947	0.8947	0.8571	0.8571	0.8571	0.8100	0.8100	0.8100	0.8464	0.8464	0.8464
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	82	14	6	35	9	3	43	6	9	51	21
Total Analysis Volume [veh/h]	105	330	56	23	140	36	12	172	25	35	206	83
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	30			86			30			19		
Bicycle Volume [bicycles/h]	27			10			3			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	14	16	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	68	68	68	68	68	22	22
g / C, Green / Cycle	0.68	0.68	0.68	0.68	0.68	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.09	0.10	0.11	0.02	0.10	0.12	0.19
s, saturation flow rate [veh/h]	1215	1900	1776	1008	1813	1785	1692
c, Capacity [veh/h]	827	1300	1215	695	1240	438	419
d1, Uniform Delay [s]	7.83	5.55	5.57	7.47	5.51	33.89	37.00
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	0.25	0.27	0.09	0.24	0.81	3.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

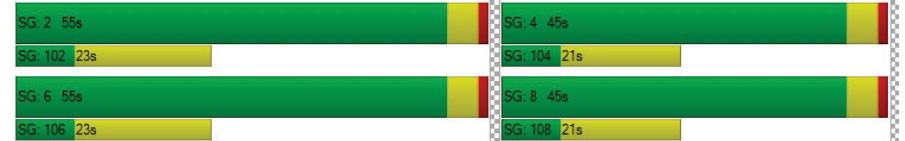
X, volume / capacity	0.13	0.15	0.16	0.03	0.14	0.48	0.77
d, Delay for Lane Group [s/veh]	8.14	5.80	5.85	7.55	5.75	34.70	40.09
Lane Group LOS	A	A	A	A	A	C	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.92	1.33	1.29	0.19	1.19	4.44	7.72
50th-Percentile Queue Length [ft/ln]	23.06	33.26	32.26	4.84	29.63	111.01	193.01
95th-Percentile Queue Length [veh/ln]	1.66	2.39	2.32	0.35	2.13	7.90	12.28
95th-Percentile Queue Length [ft/ln]	41.51	59.86	58.07	8.71	53.33	197.40	306.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.14	5.82	5.85	7.55	5.75	5.75	34.70	34.70	34.70	40.09	40.09	40.09
Movement LOS	A	A	A	A	A	A	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	6.32			5.96			34.70			40.09		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	20.06											
Intersection LOS	C											
Intersection V/C	0.298											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.292

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	80	480	110	30	90	20	30	250	20	40	200	60
Base Volume Input [veh/h]	80	480	110	30	90	20	30	250	20	40	200	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	5	19	0	0	8	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	483	110	30	90	20	35	269	20	40	208	62
Peak Hour Factor	0.9555	0.9555	0.9555	0.8468	0.8468	0.8468	0.9094	0.9094	0.9094	0.9331	0.9331	0.9331
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	126	29	9	27	6	10	74	5	11	56	17
Total Analysis Volume [veh/h]	84	505	115	35	106	24	38	296	22	43	223	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	152			133			81			50		
Bicycle Volume [bicycles/h]	10			10			4			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	25	25	25	25	25	62	62	62	62	62	62
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.18	0.04	0.07	0.03	0.08	0.09	0.04	0.12	0.04
s, saturation flow rate [veh/h]	1216	1900	1718	816	1791	1142	1900	1827	1043	1900	1490
c, Capacity [veh/h]	269	472	427	121	445	707	1177	1132	666	1177	923
d1, Uniform Delay [s]	37.71	33.93	34.22	46.17	30.44	10.20	7.90	7.92	9.65	8.20	7.57
k, delay calibration	0.04	0.05	0.07	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.86	1.47	0.49	0.13	0.14	0.24	0.26	0.19	0.36	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.68	0.70	0.29	0.29	0.05	0.14	0.14	0.06	0.19	0.07
d, Delay for Lane Group [s/veh]	37.95	34.79	35.69	46.65	30.57	10.35	8.14	8.18	9.83	8.55	7.72
Lane Group LOS	D	C	D	D	C	B	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.84	6.92	6.64	0.86	2.50	0.40	1.43	1.41	0.44	2.06	0.57
50th-Percentile Queue Length [ft/ln]	45.88	173.04	165.93	21.41	62.57	10.02	35.67	35.31	11.05	51.60	14.27
95th-Percentile Queue Length [veh/ln]	3.30	11.24	10.86	1.54	4.50	0.72	2.57	2.54	0.80	3.72	1.03
95th-Percentile Queue Length [ft/ln]	82.59	280.90	271.55	38.54	112.62	18.04	64.20	63.56	19.89	92.88	25.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.95	35.12	35.69	46.65	30.57	30.57	10.35	8.16	8.18	9.83	8.55	7.72
Movement LOS	D	D	D	D	C	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	35.55			33.98			8.39			8.55		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	23.42											
Intersection LOS	C											
Intersection V/C	0.292											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.2
Level Of Service: C
Volume to Capacity (v/c): 0.378

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	90	570	100	30	60	50	70	220	50	40	240	40
Base Volume Input [veh/h]	90	570	100	30	60	50	70	220	50	40	240	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	573	100	30	60	50	70	220	50	40	237	40
Peak Hour Factor	0.8505	0.8505	0.8505	0.8750	0.8750	0.8750	0.9438	0.9438	0.9438	0.8844	0.8844	0.8844
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	168	29	9	17	14	19	58	13	11	67	11
Total Analysis Volume [veh/h]	106	674	118	34	69	57	74	233	53	45	268	45
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	89			102			37			54		
Bicycle Volume [bicycles/h]	34			64			3			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	29	29	61	61	61	61	61
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.08	0.21	0.22	0.05	0.08	0.07	0.16	0.04	0.14	0.03
s, saturation flow rate [veh/h]	1262	1900	1744	696	1674	1107	1817	1094	1900	1513
c, Capacity [veh/h]	339	562	516	119	495	665	1113	648	1164	927
d1, Uniform Delay [s]	33.92	31.55	31.84	45.75	26.82	11.57	8.91	11.68	8.74	7.74
k, delay calibration	0.04	0.16	0.18	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	2.61	3.58	0.49	0.10	0.34	0.56	0.21	0.46	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.72	0.75	0.29	0.25	0.11	0.26	0.07	0.23	0.05
d, Delay for Lane Group [s/veh]	34.11	34.16	35.42	46.23	26.92	11.91	9.47	11.88	9.20	7.84
Lane Group LOS	C	C	D	D	C	B	A	B	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.19	8.92	8.67	0.83	2.26	0.84	2.76	0.51	2.53	0.38
50th-Percentile Queue Length [ft/ln]	54.85	223.04	216.70	20.80	56.46	20.95	69.10	12.68	63.29	9.49
95th-Percentile Queue Length [veh/ln]	3.95	13.82	13.50	1.50	4.06	1.51	4.98	0.91	4.56	0.68
95th-Percentile Queue Length [ft/ln]	98.74	345.50	337.41	37.43	101.62	37.71	124.38	22.83	113.92	17.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.11	34.66	35.42	46.23	26.92	26.92	11.91	9.47	9.47	11.88	9.20	7.84
Movement LOS	C	C	D	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.70			31.03			9.97			9.37		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	24.25											
Intersection LOS	C											
Intersection V/C	0.378											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 22.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.324

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	660	30	20	20	70	0	0	0	6	130	30
Base Volume Input [veh/h]	14	660	30	20	20	70	0	0	0	6	130	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	663	30	20	20	70	0	0	0	6	130	30
Peak Hour Factor	0.9399	0.8905	0.8905	0.7826	0.7826	0.7826	1.0000	1.0000	1.0000	0.9301	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	186	8	6	6	22	0	0	0	2	39	9
Total Analysis Volume [veh/h]	15	744	34	26	26	89	0	0	0	6	155	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	178			3			54			110		
Bicycle Volume [bicycles/h]	23			4			4			13		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	41	41	4	49	40
g / C, Green / Cycle	0.41	0.41	0.04	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.21	0.03	0.01	0.07	0.10
s, saturation flow rate [veh/h]	3618	1342	1810	1610	1830
c, Capacity [veh/h]	1485	551	65	793	742
d1, Uniform Delay [s]	21.87	17.82	47.10	13.86	19.73
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.21	0.22	1.45	0.38	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

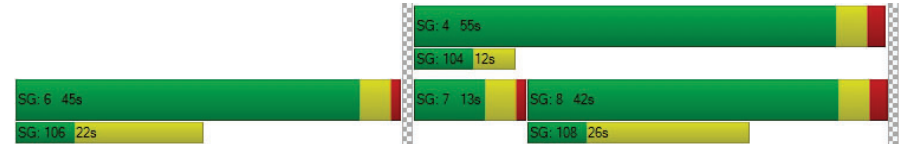
X, volume / capacity	0.50	0.06	0.40	0.15	0.26
d, Delay for Lane Group [s/veh]	23.08	18.04	48.55	14.24	20.57
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.56	0.50	0.65	1.44	3.08
50th-Percentile Queue Length [ft/ln]	163.92	12.57	16.26	36.06	77.07
95th-Percentile Queue Length [veh/ln]	10.76	0.90	1.17	2.60	5.55
95th-Percentile Queue Length [ft/ln]	268.91	22.62	29.27	64.91	138.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	23.08	18.04	48.55	14.24	14.24	0.00	0.00	0.00	0.00	20.57	20.57
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		22.86		20.57		0.00				20.57		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		22.17										
Intersection LOS		C										
Intersection V/C		0.324										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 17.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.257

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	10	80	20	20	110	20	40	160	30	30	170	30
Base Volume Input [veh/h]	10	80	20	20	110	20	40	160	30	30	170	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	0	0	-1	0	0	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	80	20	20	110	20	40	159	30	30	177	30
Peak Hour Factor	0.8225	0.8225	0.8225	0.8437	0.8437	0.8437	0.8830	0.8830	0.8830	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	24	6	6	33	6	11	45	8	8	49	8
Total Analysis Volume [veh/h]	21	97	24	24	130	24	45	180	34	33	196	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	76	76	76
g / C, Green / Cycle	0.15	0.15	0.76	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.15	0.13	0.02
s, saturation flow rate [veh/h]	1686	1728	1684	1772	1576
c, Capacity [veh/h]	296	302	1316	1382	1192
d1, Uniform Delay [s]	39.05	39.93	3.44	3.36	3.02
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	0.68	0.33	0.26	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.59	0.20	0.17	0.03
d, Delay for Lane Group [s/veh]	39.50	40.61	3.78	3.62	3.06
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.19	4.10	1.22	1.05	0.14
50th-Percentile Queue Length [ft/ln]	79.75	102.50	30.51	26.21	3.43
95th-Percentile Queue Length [veh/ln]	5.74	7.38	2.20	1.89	0.25
95th-Percentile Queue Length [ft/ln]	143.55	184.51	54.92	47.18	6.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.50	39.50	39.50	40.61	40.61	40.61	3.78	3.78	3.78	3.62	3.62	3.06
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	39.50			40.61			3.78			3.55		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.53											
Intersection LOS	B											
Intersection V/C	0.257											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.333

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	20	70	30	60	70	30	30	360	30	40	270	60
Base Volume Input [veh/h]	20	70	30	60	70	30	30	360	30	40	270	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	0	0	0	0	19	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	75	30	60	70	30	30	379	30	40	280	62
Peak Hour Factor	0.9629	0.9629	0.9629	0.8875	0.8875	0.8875	0.8500	0.8500	0.8500	0.9263	0.9263	0.9263
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	19	8	17	20	8	9	111	9	11	76	17
Total Analysis Volume [veh/h]	21	78	31	68	79	34	35	446	35	43	302	67
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	18	18	18	18	69	69	69	69	69	69
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.69	0.69	0.69	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.06	0.07	0.04	0.26	0.03	0.05	0.18	0.05
s, saturation flow rate [veh/h]	1115	1591	1136	1569	971	1710	1378	858	1710	1356
c, Capacity [veh/h]	180	290	185	286	654	1173	945	550	1173	929
d1, Uniform Delay [s]	41.57	35.88	43.07	36.01	8.33	6.68	5.06	10.35	5.99	5.19
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	0.30	0.45	0.33	0.16	0.94	0.07	0.28	0.53	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.38	0.37	0.40	0.05	0.38	0.04	0.08	0.26	0.07
d, Delay for Lane Group [s/veh]	41.68	36.18	43.52	36.34	8.48	7.62	5.14	10.63	6.53	5.34
Lane Group LOS	D	D	D	D	A	A	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.48	2.32	1.61	2.41	0.33	3.84	0.23	0.47	2.32	0.45
50th-Percentile Queue Length [ft/ln]	11.88	57.90	40.13	60.27	8.20	96.00	5.74	11.75	58.04	11.29
95th-Percentile Queue Length [veh/ln]	0.86	4.17	2.89	4.34	0.59	6.91	0.41	0.85	4.18	0.81
95th-Percentile Queue Length [ft/ln]	21.39	104.21	72.23	108.49	14.76	172.80	10.33	21.15	104.46	20.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.68	36.18	36.18	43.52	36.34	36.34	8.48	7.62	5.14	10.63	6.53	5.34
Movement LOS	D	D	D	D	D	D	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	37.07			39.04			7.51			6.76		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.97											
Intersection LOS	B											
Intersection V/C	0.333											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.336

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	30	180	30	40	180	30	70	160	40	30	190	40
Base Volume Input [veh/h]	30	180	30	40	180	30	70	160	40	30	190	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	0	0	0	0	0	-1	0	0	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	180	30	40	180	30	70	159	40	30	198	40
Peak Hour Factor	0.8965	0.8965	0.8965	0.7875	0.7875	0.7875	0.7827	0.7827	0.7827	0.8125	0.8125	0.8125
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	50	8	13	57	10	22	51	13	9	61	12
Total Analysis Volume [veh/h]	32	201	33	51	229	38	89	203	51	37	244	49
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	21	21	21	21	70	70	70
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.70	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.04	0.15	0.19	0.03	0.19
s, saturation flow rate [veh/h]	1093	1833	1149	1808	1548	1572	1756
c, Capacity [veh/h]	129	389	156	384	1123	1094	1261
d1, Uniform Delay [s]	46.29	35.54	44.92	36.37	5.50	4.79	5.65
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.56	0.45	0.85	0.56	0.08	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.60	0.33	0.69	0.26	0.05	0.26
d, Delay for Lane Group [s/veh]	46.66	36.09	45.37	37.22	6.06	4.87	6.15
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.79	5.22	1.25	6.11	2.02	0.31	2.32
50th-Percentile Queue Length [ft/ln]	19.85	130.44	31.30	152.84	50.39	7.64	58.03
95th-Percentile Queue Length [veh/ln]	1.43	8.96	2.25	10.17	3.63	0.55	4.18
95th-Percentile Queue Length [ft/ln]	35.73	224.09	56.33	254.22	90.71	13.75	104.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.66	36.09	36.09	45.37	37.22	37.22	6.06	6.06	4.87	6.15	6.15	6.15
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.36			38.53			5.88			6.15		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	20.87											
Intersection LOS	C											
Intersection V/C	0.336											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 18.8
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.360

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	20	240	40	70	110	30	60	350	40	30	330	100
Base Volume Input [veh/h]	20	240	40	70	110	30	60	350	40	30	330	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	19	0	-2	12	-1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	240	40	70	110	30	60	369	40	28	342	99
Peak Hour Factor	0.9300	0.9300	0.9300	0.7908	0.7908	0.7908	0.9059	0.9059	0.9059	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	65	11	22	35	9	17	102	11	8	93	27
Total Analysis Volume [veh/h]	22	258	43	89	139	38	66	407	44	31	374	108
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	60	60	60	60	60	60
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.02	0.16	0.08	0.10	0.06	0.12	0.12	0.03	0.20	0.07
s, saturation flow rate [veh/h]	1211	1842	1089	1810	1018	1900	1818	946	1900	1549
c, Capacity [veh/h]	272	486	182	478	566	1148	1098	571	1148	936
d1, Uniform Delay [s]	35.48	32.40	43.96	30.04	14.15	8.90	8.92	11.54	9.75	8.42
k, delay calibration	0.04	0.07	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.78	0.75	0.18	0.42	0.39	0.42	0.18	0.76	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.62	0.49	0.37	0.12	0.20	0.20	0.05	0.33	0.12
d, Delay for Lane Group [s/veh]	35.53	33.18	44.71	30.22	14.57	9.29	9.34	11.72	10.51	8.67
Lane Group LOS	D	C	D	C	B	A	A	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.46	6.51	2.20	3.52	0.87	2.23	2.18	0.36	4.01	1.01
50th-Percentile Queue Length [ft/ln]	11.59	162.78	55.01	87.90	21.76	55.70	54.50	8.91	100.31	25.14
95th-Percentile Queue Length [veh/ln]	0.83	10.70	3.96	6.33	1.57	4.01	3.92	0.64	7.22	1.81
95th-Percentile Queue Length [ft/ln]	20.87	267.40	99.02	158.22	39.16	100.27	98.10	16.04	180.56	45.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.53	33.18	33.18	44.71	30.22	30.22	14.57	9.31	9.34	11.72	10.51	8.67
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	A
d_A, Approach Delay [s/veh]	33.34			35.07			9.99			10.19		
Approach LOS	C			D			A			B		
d_I, Intersection Delay [s/veh]	18.83											
Intersection LOS	B											
Intersection V/C	0.360											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.455

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	150	360	270	60	390	20	20	540	160	220	550	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	9	0	3	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	360	270	60	390	20	20	549	160	223	556	40
Peak Hour Factor	0.9050	0.9050	0.9050	0.9194	0.9194	0.9194	0.8737	0.8737	0.8737	0.9366	0.9366	0.9366
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	99	75	16	106	5	6	157	46	60	148	11
Total Analysis Volume [veh/h]	166	398	298	65	424	22	23	628	183	238	594	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	39			27			19			22		
Bicycle Volume [bicycles/h]	6			9			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	43	43	43	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.43	0.43	0.43	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.21	0.19	0.07	0.12	0.12	0.03	0.17	0.12	0.24	0.16	0.03
s, saturation flow rate [veh/h]	1200	1900	1560	994	1900	1857	830	3618	1551	991	3618	1542
c, Capacity [veh/h]	430	670	551	111	442	432	345	1574	675	563	2008	856
d1, Uniform Delay [s]	23.74	26.49	25.89	48.85	33.38	33.42	23.15	19.32	18.10	12.37	11.84	10.18
k, delay calibration	0.30	0.09	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	0.68	0.33	1.84	0.34	0.35	0.37	0.76	0.99	2.32	0.38	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.59	0.54	0.59	0.51	0.51	0.07	0.40	0.27	0.42	0.30	0.05
d, Delay for Lane Group [s/veh]	25.32	27.17	26.21	50.69	33.72	33.77	23.52	20.07	19.09	14.69	12.22	10.29
Lane Group LOS	C	C	C	D	C	C	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.95	7.72	5.60	1.66	4.67	4.62	0.41	5.04	2.85	2.90	3.40	0.44
50th-Percentile Queue Length [ft/ln]	73.64	192.97	140.12	41.50	116.79	115.40	10.22	125.95	71.16	72.52	84.90	10.90
95th-Percentile Queue Length [veh/ln]	5.30	12.28	9.49	2.99	8.22	8.14	0.74	8.72	5.12	5.22	6.11	0.78
95th-Percentile Queue Length [ft/ln]	132.54	306.88	237.19	74.70	205.41	203.49	18.39	217.97	128.08	130.54	152.81	19.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.32	27.17	26.21	50.69	33.74	33.77	23.52	20.07	19.09	14.69	12.22	10.29
Movement LOS	C	C	C	D	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	26.49			35.90			19.95			12.80		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	22.39											
Intersection LOS	C											
Intersection V/C	0.455											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 49.5
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.815

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	130	620	120	20	670	40	30	110	80	70	140	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	3	0	-1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	620	120	20	670	43	30	109	80	70	140	50
Peak Hour Factor	0.9138	0.9138	0.9138	0.9461	0.9461	0.9461	0.7357	0.7357	0.7357	0.9154	0.9154	0.9154
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	170	33	5	177	11	10	37	27	19	38	14
Total Analysis Volume [veh/h]	148	678	131	21	708	45	41	148	109	76	153	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164			102			111			62		
Bicycle Volume [bicycles/h]	4			3			0			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No
Maximum Recall	No	No		No	No			No				No
Pedestrian Recall	No	No		No	No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	56	56	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.56	0.56	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.17	0.22	0.23	0.03	0.20	0.20	0.39	0.08	0.57	0.04
s, saturation flow rate [veh/h]	885	1900	1741	787	1900	1824	487	1325	400	1413
c, Capacity [veh/h]	577	1056	967	514	985	945	178	364	158	388
d1, Uniform Delay [s]	8.34	12.63	12.74	7.75	14.50	14.57	32.10	28.66	40.42	27.36
k, delay calibration	0.45	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	1.10	1.27	0.15	1.15	1.23	85.58	0.17	234.90	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.39	0.41	0.04	0.39	0.39	1.06	0.30	1.45	0.14
d, Delay for Lane Group [s/veh]	9.31	13.73	14.01	7.90	15.64	15.81	117.68	28.82	275.32	27.43
Lane Group LOS	A	B	B	A	B	B	F	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.33	5.35	5.13	0.18	5.30	5.23	7.56	2.04	14.18	0.98
50th-Percentile Queue Length [ft/ln]	33.26	133.73	128.21	4.40	132.40	130.83	189.02	51.03	354.60	24.55
95th-Percentile Queue Length [veh/ln]	2.39	9.14	8.84	0.32	9.07	8.98	12.47	3.67	24.08	1.77
95th-Percentile Queue Length [ft/ln]	59.87	228.55	221.05	7.92	226.76	224.62	311.79	91.85	601.98	44.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.31	13.84	14.01	7.90	15.72	15.81	117.68	117.68	28.82	275.32	275.32	27.43
Movement LOS	A	B	B	A	B	B	F	F	C	F	F	C
d_A, Approach Delay [s/veh]	13.16			15.51			85.18			227.31		
Approach LOS	B			B			F			F		
d_I, Intersection Delay [s/veh]	49.52											
Intersection LOS	D											
Intersection V/C	0.815											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.6
Level Of Service: C
Volume to Capacity (v/c): 0.495

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	110	750	190	70	720	30	30	320	120	110	320	120
Base Volume Input [veh/h]	110	750	190	70	720	30	30	320	120	110	320	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	5	0	0	0	0	0	11	8	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	755	190	70	720	30	30	331	128	110	331	120
Peak Hour Factor	0.9396	0.9396	0.9396	0.8850	0.8850	0.8850	0.9209	0.9209	0.9209	0.9532	0.9532	0.9532
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	201	51	20	203	8	8	90	35	29	87	31
Total Analysis Volume [veh/h]	115	804	202	79	814	34	33	359	139	115	347	126
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			54			48			29		
Bicycle Volume [bicycles/h]	10			3			1			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	57	46	46	57	46	46	22	22	22	34	34	34
g / C, Green / Cycle	0.57	0.46	0.46	0.57	0.46	0.46	0.22	0.22	0.22	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.27	0.28	0.10	0.22	0.23	0.03	0.14	0.15	0.10	0.18	0.08
s, saturation flow rate [veh/h]	847	1900	1741	761	1900	1865	1022	1900	1650	1163	1900	1515
c, Capacity [veh/h]	489	879	806	424	871	855	127	424	368	378	640	510
d1, Uniform Delay [s]	11.30	19.88	20.02	12.14	18.93	18.96	46.30	34.93	35.29	24.52	26.92	24.00
k, delay calibration	0.29	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.10	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	2.92	3.33	0.97	1.97	2.03	0.40	0.53	0.72	0.41	0.27	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

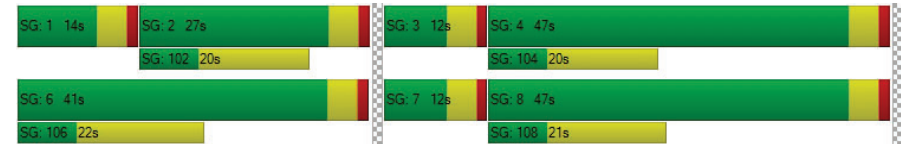
X, volume / capacity	0.24	0.59	0.60	0.19	0.49	0.49	0.26	0.61	0.65	0.30	0.54	0.25
d, Delay for Lane Group [s/veh]	11.96	22.80	23.35	13.11	20.91	20.98	46.70	35.46	36.01	24.92	27.19	24.09
Lane Group LOS	B	C	C	B	C	C	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.20	9.34	8.85	0.86	7.18	7.10	0.81	5.66	5.30	1.95	6.64	2.15
50th-Percentile Queue Length [ft/ln]	29.95	233.62	221.34	21.50	179.54	177.50	20.30	141.48	132.58	48.77	166.10	53.72
95th-Percentile Queue Length [veh/ln]	2.16	14.36	13.73	1.55	11.58	11.47	1.46	9.56	9.08	3.51	10.87	3.87
95th-Percentile Queue Length [ft/ln]	53.91	358.95	343.33	38.70	289.41	286.74	36.55	239.02	226.99	87.78	271.78	96.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.96	23.00	23.35	13.11	20.94	20.98	46.70	35.62	36.01	24.92	27.19	24.09
Movement LOS	B	C	C	B	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	21.93			20.28			36.41			26.08		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	24.64											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.9
Level Of Service: C
Volume to Capacity (v/c): 0.545

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	100	970	180	30	870	40	50	190	140	140	220	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	3	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	973	180	30	878	40	50	190	140	140	220	50
Peak Hour Factor	0.9760	0.9760	0.9760	0.9479	0.9479	0.9479	0.8510	0.8510	0.8510	0.8772	0.8772	0.8772
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	249	46	8	232	11	15	56	41	40	63	14
Total Analysis Volume [veh/h]	101	997	184	32	926	42	59	223	165	160	251	57
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	58			79			72			42		
Bicycle Volume [bicycles/h]	48			57			6			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	7	51	51	40	40	40	26	26	26	35	35
g / C, Green / Cycle	0.07	0.51	0.51	0.40	0.40	0.40	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.06	0.32	0.33	0.07	0.26	0.26	0.05	0.12	0.11	0.31	0.04
s, saturation flow rate [veh/h]	1810	1900	1735	482	1900	1852	1147	1900	1481	1333	1486
c, Capacity [veh/h]	129	978	894	138	756	737	73	488	380	475	524
d1, Uniform Delay [s]	45.70	17.26	17.60	39.85	24.38	24.47	50.00	31.28	31.07	30.00	21.76
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.96	2.93	3.57	3.88	4.21	4.45	7.94	0.25	0.29	18.64	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.62	0.64	0.23	0.65	0.65	0.81	0.46	0.43	0.87	0.11
d, Delay for Lane Group [s/veh]	49.66	20.19	21.18	43.73	28.60	28.92	57.94	31.53	31.36	48.64	21.80
Lane Group LOS	D	C	C	D	C	C	E	C	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.59	10.21	10.02	0.87	9.97	9.89	1.62	4.46	3.28	10.29	0.89
50th-Percentile Queue Length [ft/ln]	64.84	255.19	250.59	21.79	249.22	247.21	40.38	111.49	82.09	257.21	22.13
95th-Percentile Queue Length [veh/ln]	4.67	15.45	15.22	1.57	15.15	15.05	2.91	7.92	5.91	15.55	1.59
95th-Percentile Queue Length [ft/ln]	116.72	386.19	380.39	39.22	378.67	376.14	72.69	198.08	147.76	388.72	39.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.66	20.58	21.18	43.73	28.75	28.92	57.94	31.53	31.36	48.64	48.64	21.80
Movement LOS	D	C	C	D	C	C	E	C	C	D	D	C
d_A, Approach Delay [s/veh]	22.95			29.23			34.96			45.37		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.88											
Intersection LOS	C											
Intersection V/C	0.545											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 71.0
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.525

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	80	1250	120	20	1140	20	6	70	70	66	110	40
Base Volume Input [veh/h]	80	1250	120	20	1140	20	6	70	70	66	110	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	2	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	1252	120	20	1148	20	6	70	70	66	110	40
Peak Hour Factor	0.9193	0.9193	0.9193	0.9119	0.9119	0.9119	0.8750	0.7635	0.7635	0.9427	0.8293	0.8293
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	340	33	5	315	5	2	23	23	18	33	12
Total Analysis Volume [veh/h]	92	1362	131	22	1259	22	7	92	92	70	133	48
Presence of On-Street Parking	No		No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			32			25			16		
Bicycle Volume [bicycles/h]	13			12			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	2	7	4	6	5	2	3	1	6	8
Auxiliary Signal Groups									2.3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	0	7	7
Maximum Green [s]	15	30	40	15	30	40	0	40	15	0	40	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	30	0	30	0	0	30	0	30	30	0	30	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	18	17	0	18	17	0	17	0	0	17	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	0.0	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	6	33	33	3	30	30	40	40
g / C, Green / Cycle	0.07	0.37	0.37	0.03	0.33	0.33	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.40	0.41	0.01	0.34	0.34	0.11	0.10
s, saturation flow rate [veh/h]	1810	1900	1821	1810	1900	1883	1717	1795
c, Capacity [veh/h]	128	702	673	62	632	626	762	796
d1, Uniform Delay [s]	41.02	28.44	28.44	42.59	30.09	30.09	15.64	15.53
k, delay calibration	0.04	0.50	0.50	0.04	0.44	0.44	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.82	55.50	65.03	1.30	37.65	38.94	0.75	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	1.07	1.10	0.36	1.02	1.02	0.24	0.23
d, Delay for Lane Group [s/veh]	43.85	83.93	93.46	43.88	67.74	69.03	16.39	16.19
Lane Group LOS	D	F	F	D	F	F	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.08	25.17	25.91	0.50	19.70	19.75	2.43	2.37
50th-Percentile Queue Length [ft/ln]	51.93	629.29	647.77	12.42	492.56	493.71	60.87	59.24
95th-Percentile Queue Length [veh/ln]	3.74	35.08	36.53	0.89	27.27	27.40	4.38	4.27
95th-Percentile Queue Length [ft/ln]	93.47	876.95	913.22	22.36	681.85	684.92	109.56	106.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.85	88.19	93.46	43.88	68.37	69.03	0.00	16.39	16.39	0.00	16.19	16.19
Movement LOS	D	F	F	D	F	E		B	B		B	B
d_A, Approach Delay [s/veh]	86.05		67.97		16.39		16.19					
Approach LOS	F		E		B		B					
d_I, Intersection Delay [s/veh]	70.98											
Intersection LOS	E											
Intersection V/C	0.525											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 90.6
 Level Of Service: F
 Volume to Capacity (v/c): 0.961

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	260	680	0	1210	40	0	0	0	0	720	250
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	687	0	1218	40	0	0	0	0	720	250	800
Peak Hour Factor	0.8698	0.8698	1.0000	1.0000	0.8931	0.8931	1.0000	1.0000	1.0000	0.9451	0.9451	0.9451
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	197	0	341	11	0	0	0	0	190	66	212
Total Analysis Volume [veh/h]	299	790	0	1364	45	0	0	0	0	762	265	846
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1			10			43		
Bicycle Volume [bicycles/h]	3			0			5			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	23	55	0	0	32	32	0	0	0	35	35	35
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	50	29	29	30	30	30	30
g / C, Green / Cycle	0.18	0.56	0.32	0.32	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.17	0.22	0.26	0.25	0.54	0.26	0.29	0.53
s, saturation flow rate [veh/h]	1810	3618	3618	1866	900	1847	1475	900
c, Capacity [veh/h]	334	2026	1174	606	304	624	498	304
d1, Uniform Delay [s]	35.86	11.15	27.73	27.43	29.80	26.74	27.93	29.80
k, delay calibration	0.23	0.50	0.50	0.50	0.50	0.24	0.32	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.09	0.57	5.76	9.38	279.3	4.54	12.49	267.0
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.39	0.80	0.78	1.59	0.78	0.87	1.56
d, Delay for Lane Group [s/veh]	51.95	11.71	33.49	36.81	309.1	31.28	40.42	296.8
Lane Group LOS	D	B	C	D	F	C	D	F
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	7.76	4.26	9.82	10.37	29.55	9.30	9.68	28.51
50th-Percentile Queue Length [ft/ln]	194.03	106.52	245.56	259.15	738.7	232.6	242.1	712.7
95th-Percentile Queue Length [veh/ln]	12.33	7.65	14.96	15.65	48.11	14.31	14.79	46.33
95th-Percentile Queue Length [ft/ln]	308.25	191.15	374.06	391.16	1202.	357.6	369.6	1158.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.95	11.71	0.00	0.00	34.52	36.81	0.00	0.00	0.00	201.81	33.37	188.05
Movement LOS	D	B			C	D				F	C	F
d_A, Approach Delay [s/veh]	22.76		34.60			0.00		172.14				
Approach LOS	C		C			A		F				
d_I, Intersection Delay [s/veh]	90.59											
Intersection LOS	F											
Intersection V/C	0.961											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 38.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.808

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	800	740	800	1090	0	200	480	270	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	807	740	800	1098	0	200	480	270	0	0	0
Peak Hour Factor	1.0000	0.8776	0.8776	0.8633	0.8633	1.0000	0.7468	0.7468	0.7468	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	230	211	232	318	0	67	161	90	0	0	0
Total Analysis Volume [veh/h]	0	920	843	927	1272	0	268	643	362	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			15			37		
Bicycle Volume [bicycles/h]	0			5			8			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	20	30	0	37	37	37	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	30	30	23	53	0	37	37	37	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No	No	Yes	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	22	55	25	25	25
g / C, Green / Cycle	0.32	0.32	0.32	0.24	0.62	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.29	0.26	0.35	0.26	0.25	0.23
s, saturation flow rate [veh/h]	3618	1523	1523	3514	3618	1847	1729	1585
c, Capacity [veh/h]	1171	493	493	847	2228	521	488	447
d1, Uniform Delay [s]	27.25	29.00	29.00	34.18	10.25	31.17	31.14	30.09
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.11	0.11	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	2.37	2.37	59.75	1.07	6.46	6.63	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

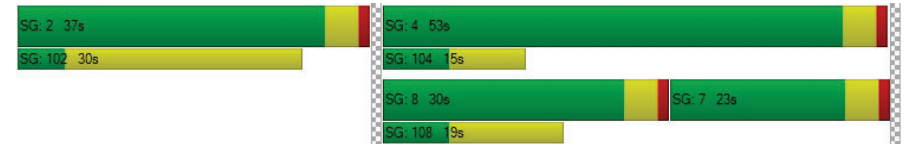
X, volume / capacity	0.75	0.89	0.89	1.09	0.57	0.90	0.90	0.81
d, Delay for Lane Group [s/veh]	27.62	31.37	31.37	93.93	11.32	37.63	37.77	32.03
Lane Group LOS	C	C	C	F	B	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.11	8.89	8.89	16.01	6.92	10.33	9.66	7.21
50th-Percentile Queue Length [ft/ln]	202.77	222.31	222.31	400.32	173.01	258.26	241.52	180.23
95th-Percentile Queue Length [veh/ln]	12.78	13.78	13.78	23.73	11.23	15.60	14.76	11.61
95th-Percentile Queue Length [ft/ln]	319.54	344.58	344.58	593.36	280.87	390.04	368.95	290.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	27.62	31.37	93.93	11.32	0.00	37.63	37.72	32.03	0.00	0.00	0.00
Movement LOS		C	C	F	B		D	D	C			
d_A, Approach Delay [s/veh]		29.50		46.15		36.08				0.00		
Approach LOS		C		D		D				A		
d_I, Intersection Delay [s/veh]		38.09										
Intersection LOS		D										
Intersection V/C		0.808										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 7.5
Level Of Service: A
Volume to Capacity (v/c): 0.366

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	840	140	60	570	40	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	25	-1	0	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	865	139	60	576	40	90
Peak Hour Factor	0.8732	0.8732	0.9247	0.9247	0.8357	0.8357
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	248	40	16	156	12	27
Total Analysis Volume [veh/h]	991	159	65	623	48	108
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	79		91		60	
Bicycle Volume [bicycles/h]	2		28		7	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	76	76	76	76	11	11
g / C, Green / Cycle	0.76	0.76	0.76	0.76	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.27	0.10	0.11	0.17	0.03	0.09
s, saturation flow rate [veh/h]	3618	1557	576	3618	1405	1174
c, Capacity [veh/h]	2757	1187	446	2757	149	124
d1, Uniform Delay [s]	3.90	3.15	6.91	3.42	41.37	44.01
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.23	0.69	0.19	0.46	6.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.13	0.15	0.23	0.32	0.87
d, Delay for Lane Group [s/veh]	4.27	3.39	7.60	3.61	41.84	50.85
Lane Group LOS	A	A	A	A	D	D
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.68	0.74	0.59	1.47	1.10	2.82
50th-Percentile Queue Length [ft/ln]	67.07	18.43	14.66	36.87	27.47	70.50
95th-Percentile Queue Length [veh/ln]	4.83	1.33	1.06	2.65	1.98	5.08
95th-Percentile Queue Length [ft/ln]	120.72	33.17	26.39	66.37	49.44	126.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.27	3.39	7.60	3.61	41.84	50.85
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	4.14		3.99		48.07	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	7.53					
Intersection LOS	A					
Intersection V/C	0.366					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 93.6
Level Of Service: F
Volume to Capacity (v/c): 0.696

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	30	200	410	70	90	10	20	350	60	110	60	30
Base Volume Input [veh/h]	30	200	410	70	90	10	20	350	60	110	60	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	8	14	0	0	2	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	204	410	78	104	10	20	352	60	110	60	30
Peak Hour Factor	0.9761	0.9761	0.9761	0.8833	0.8833	0.8833	0.7985	0.7985	0.7985	0.9583	0.9583	0.9583
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	52	105	22	29	3	6	110	19	29	16	8
Total Analysis Volume [veh/h]	31	209	420	88	118	11	25	441	75	115	63	31
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	38			99			69			77		
Bicycle Volume [bicycles/h]	1			1			56			15		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	45	0	10	45	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	46	38	46	39	16	16	16	16
g / C, Green / Cycle	0.58	0.47	0.58	0.49	0.21	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.39	0.09	0.07	0.02	0.28	0.13	0.06
s, saturation flow rate [veh/h]	1341	1626	958	1854	1184	1811	899	1674
c, Capacity [veh/h]	861	763	417	908	251	372	90	344
d1, Uniform Delay [s]	7.27	18.44	12.57	11.23	30.57	31.87	40.12	26.82
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.15	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	9.87	1.15	0.33	0.06	178.63	131.11	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

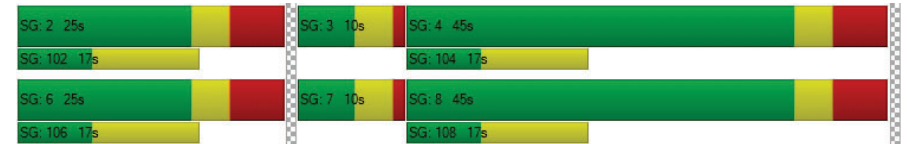
X, volume / capacity	0.04	0.82	0.21	0.14	0.10	1.39	1.28	0.27
d, Delay for Lane Group [s/veh]	7.27	28.31	13.72	11.56	30.63	210.50	171.24	26.98
Lane Group LOS	A	C	B	B	C	F	F	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.20	11.02	0.73	1.26	0.42	25.42	5.01	1.47
50th-Percentile Queue Length [ft/ln]	4.96	275.61	18.28	31.38	10.55	635.57	125.22	36.67
95th-Percentile Queue Length [veh/ln]	0.36	16.47	1.32	2.26	0.76	39.17	9.02	2.64
95th-Percentile Queue Length [ft/ln]	8.92	411.75	32.90	56.49	18.99	979.14	225.40	66.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.27	28.31	28.31	13.72	11.56	11.56	30.63	210.50	210.50	171.24	26.98	26.98
Movement LOS	A	C	C	B	B	B	C	F	F	F	C	C
d_A, Approach Delay [s/veh]	27.32			12.44			202.19			106.36		
Approach LOS	C			B			F			F		
d_I, Intersection Delay [s/veh]	93.64											
Intersection LOS	F											
Intersection V/C	0.696											

Sequence

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



Intersection Level Of Service Report
Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 11.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.414

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Northbound				Southbound				Eastbound				Westbound				
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Base Volume Input [veh/h]	40	0	1090	210	190	880	0	32	1085	209	50	0	50	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	15	0	2	4	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	40	0	1105	210	192	884	0	32	1085	209	50	0	50	0	0	
Peak Hour Factor	1.000	1.000	0.913	0.913	0.9733	0.9733	1.0000	1.0000	1.0000	1.0000	1.0000	0.8241	1.0000	0.8241	1.0000	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	10	0	303	57	49	227	0	8	271	52	15	0	15	0	0	
Total Analysis Volume [veh/h]	40	0	1210	230	197	908	0	32	1085	209	61	0	61	0	0	
Presence of On-Street Parking	No			No	No	No	No				No	No	No	No	No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	25				40				0				0			
Bicycle Volume [bicycles/h]	0				3				13				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	60.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	0	53	0	10	53	0	0	0	0	27	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk			No			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	56	56	66	58	15	15
g / C, Green / Cycle	0.04	0.62	0.62	0.73	0.64	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.14	0.31	0.25	0.04	0.04
s, saturation flow rate [veh/h]	1810	3618	1615	627	3618	1729	1501
c, Capacity [veh/h]	64	2244	1002	484	2321	293	254
d1, Uniform Delay [s]	42.79	9.75	7.57	6.76	7.72	32.18	32.36
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.59	0.93	0.53	2.53	0.50	0.13	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

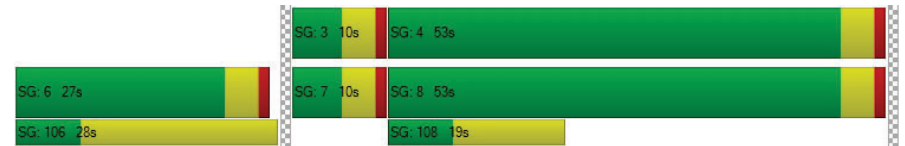
X, volume / capacity	0.62	0.54	0.23	0.41	0.39	0.21	0.24
d, Delay for Lane Group [s/veh]	46.38	10.69	8.10	9.28	8.21	32.31	32.54
Lane Group LOS	D	B	A	A	A	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.93	6.29	1.92	1.20	3.83	1.14	1.15
50th-Percentile Queue Length [ft/ln]	23.32	157.14	47.93	30.04	95.85	28.54	28.75
95th-Percentile Queue Length [veh/ln]	1.68	10.40	3.45	2.16	6.90	2.05	2.07
95th-Percentile Queue Length [ft/ln]	41.97	259.93	86.28	54.07	172.53	51.37	51.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.38	0.00	10.69	8.10	9.28	8.21	0.00	0.00	0.00	0.00	32.31	0.00	32.54
Movement LOS	D		B	A	A	A					C		C
d_A, Approach Delay [s/veh]	11.25			8.40			0.00			32.42			
Approach LOS	B			A			A			C			
d_I, Intersection Delay [s/veh]	11.04												
Intersection LOS	B												
Intersection V/C	0.414												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 48.4
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.010

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	30	2510	2	290	2280	30	10	10	20	80	30	300
Base Volume Input [veh/h]	30	2510	2	290	2280	30	10	10	20	80	30	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	4	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	2510	2	294	2280	30	10	10	20	84	30	304
Peak Hour Factor	0.8616	0.8616	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	728	1	75	583	8	4	4	8	25	9	92
Total Analysis Volume [veh/h]	35	2913	2	301	2332	31	16	16	32	101	36	366
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	245	245	245	245	245	245	245	245
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	6	139	47	179	179	45	45	96
g / C, Green / Cycle	0.03	0.57	0.19	0.73	0.73	0.18	0.18	0.39
(v / s)_i Volume / Saturation Flow Rate	0.02	0.56	0.17	0.43	0.43	0.28	0.23	0.23
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1887	228	595	1615
c, Capacity [veh/h]	46	2932	344	2643	1379	60	135	631
d1, Uniform Delay [s]	118.72	52.70	96.52	15.56	15.62	93.46	103.99	58.90
k, delay calibration	0.04	0.04	0.10	0.04	0.06	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.23	3.43	6.58	0.08	0.21	134.99	82.33	3.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

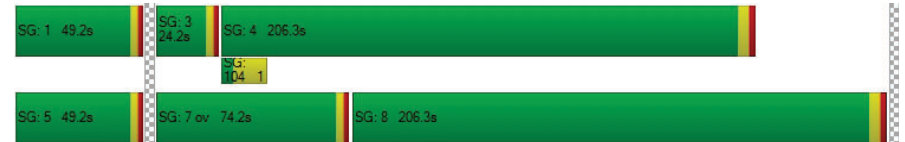
X, volume / capacity	0.76	0.99	0.88	0.59	0.59	1.06	1.02	0.58
d, Delay for Lane Group [s/veh]	127.95	56.13	103.10	15.64	15.83	228.45	186.32	62.76
Lane Group LOS	F	E	F	B	B	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.36	58.59	19.26	20.09	21.18	6.18	11.89	19.06
50th-Percentile Queue Length [ft/ln]	58.99	1464.80	481.59	502.13	529.38	154.47	297.27	476.60
95th-Percentile Queue Length [veh/ln]	4.25	71.15	26.46	27.43	28.72	10.54	17.71	26.22
95th-Percentile Queue Length [ft/ln]	106.18	1778.64	661.54	685.87	718.04	263.56	442.64	655.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	127.95	56.13	0.00	103.10	15.70	15.83	228.45	228.45	228.45	186.32	186.32	62.76
Movement LOS	F	E		F	B	B	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	56.98		25.58			228.45		96.41				
Approach LOS	E		C			F		F				
d_I, Intersection Delay [s/veh]	48.43											
Intersection LOS	D											
Intersection V/C	1.010											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 141.5
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.203

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	240	530	110	30	440	80	60	130	190	0	60	120	70
Base Volume Input [veh/h]	240	530	110	30	440	80	60	130	190	0	60	120	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	8	0	0	10	0	0	0	4	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	538	110	30	450	80	60	130	194	0	60	120	70
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	143	29	9	129	23	16	36	53	0	19	38	22
Total Analysis Volume [veh/h]	264	573	117	34	515	92	66	142	213	0	75	151	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	3	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.03	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.15	0.30	0.09	0.02	0.27	0.07	0.61	0.14	0.79	0.10
s, saturation flow rate [veh/h]	1810	1900	1266	1810	1900	1352	341	1518	288	860
c, Capacity [veh/h]	189	1152	768	55	1012	720	111	570	101	159
d1, Uniform Delay [s]	44.75	11.09	8.53	47.86	14.98	11.72	40.54	22.67	41.20	36.98
k, delay calibration	0.20	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	191.34	1.54	0.42	4.07	1.83	0.37	429.00	0.15	585.54	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

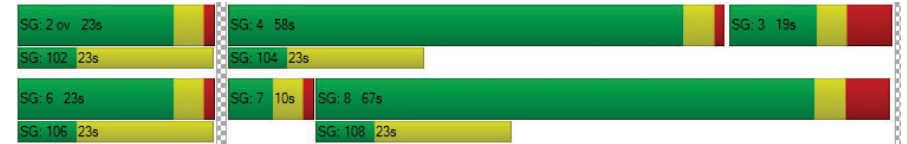
X, volume / capacity	1.40	0.50	0.15	0.61	0.51	0.13	1.88	0.37	2.23	0.55
d, Delay for Lane Group [s/veh]	236.09	12.63	8.95	51.93	16.81	12.09	469.54	22.82	626.74	38.09
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	14.68	7.08	1.13	0.90	7.63	1.07	15.95	3.67	18.95	1.96
50th-Percentile Queue Length [ft/ln]	367.06	177.04	28.13	22.39	190.85	26.70	398.67	91.68	473.86	49.11
95th-Percentile Queue Length [veh/ln]	23.54	11.45	2.03	1.61	12.17	1.92	27.61	6.60	32.80	3.54
95th-Percentile Queue Length [ft/ln]	588.62	286.15	50.64	40.29	304.14	48.06	690.17	165.02	820.10	88.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	236.09	12.63	8.95	51.93	16.81	12.09	469.54	469.54	22.82	626.7	626.7	626.7	38.09
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	74.02			18.00			243.53			461.77			
Approach LOS	E			B			F			F			
d_I, Intersection Delay [s/veh]	141.49												
Intersection LOS	F												
Intersection V/C	1.203												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.396

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	640	160	110	560	240	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	6	0	14	-1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	656	166	110	574	239	270
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	177	45	29	151	69	78
Total Analysis Volume [veh/h]	710	180	116	606	275	311
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.20	0.13	0.13	0.17	0.16	0.11	0.17
s, saturation flow rate [veh/h]	3618	1371	894	3618	1299	1678	1064
c, Capacity [veh/h]	2099	795	648	2509	226	293	186
d1, Uniform Delay [s]	10.96	10.14	5.68	5.64	40.55	38.50	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.11	0.04	0.16
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	0.66	0.60	0.23	14.08	0.95	37.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

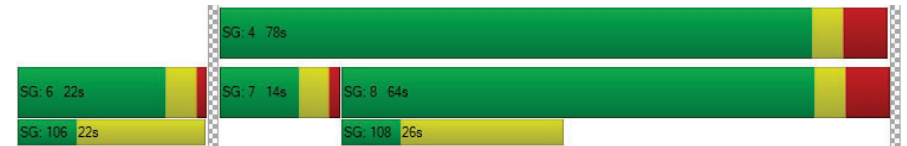
X, volume / capacity	0.34	0.23	0.18	0.24	0.92	0.66	1.00
d, Delay for Lane Group [s/veh]	11.40	10.80	6.28	5.86	54.63	39.45	79.23
Lane Group LOS	B	B	A	A	D	D	F
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.00	1.96	0.81	2.13	5.83	4.45	6.46
50th-Percentile Queue Length [ft/ln]	100.01	49.07	20.13	53.13	145.81	111.15	161.58
95th-Percentile Queue Length [veh/ln]	7.20	3.53	1.45	3.83	9.79	7.90	10.64
95th-Percentile Queue Length [ft/ln]	180.01	88.32	36.24	95.63	244.83	197.60	265.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.40	10.80	6.28	5.86	50.45	64.09
Movement LOS	B	B	A	A	D	E
d_A, Approach Delay [s/veh]	11.28		5.93		57.43	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	21.83					
Intersection LOS	C					
Intersection V/C	0.396					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 12.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.362

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	640	100	70	730	110	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	44	16	-3	-4	-1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	663	144	86	727	106	109
Peak Hour Factor	0.9093	0.9093	0.9413	0.9413	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	40	23	193	31	32
Total Analysis Volume [veh/h]	729	158	91	772	125	129
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389		253	
Bicycle Volume [bicycles/h]	6		7		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.20	0.12	0.12	0.21	0.15
s, saturation flow rate [veh/h]	3618	1339	729	3618	1705
c, Capacity [veh/h]	2235	827	435	2235	426
d1, Uniform Delay [s]	9.13	8.27	14.40	9.27	33.02
k, delay calibration	0.50	0.50	0.50	0.50	0.05
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.51	1.09	0.42	0.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

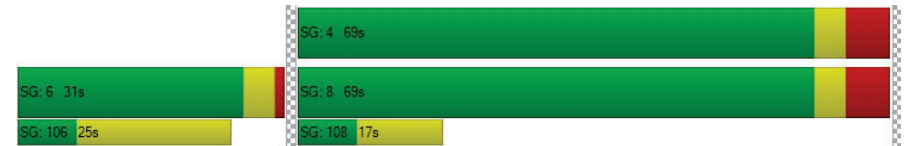
X, volume / capacity	0.33	0.19	0.21	0.35	0.60
d, Delay for Lane Group [s/veh]	9.52	8.78	15.49	9.69	33.66
Lane Group LOS	A	A	B	A	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.64	1.50	1.28	3.92	5.36
50th-Percentile Queue Length [ft/ln]	91.08	37.50	32.03	97.95	134.10
95th-Percentile Queue Length [veh/ln]	6.56	2.70	2.31	7.05	9.16
95th-Percentile Queue Length [ft/ln]	163.94	67.51	57.65	176.31	229.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.52	8.78	15.49	9.69	33.66	33.66
Movement LOS	A	A	B	A	C	C
d_A, Approach Delay [s/veh]	9.39		10.30		33.66	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]				12.86		
Intersection LOS				B		
Intersection V/C				0.362		

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	660	210	110	700	160	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	-6	-2	-2	4	28
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	695	204	108	698	164	158
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	196	57	31	199	45	44
Total Analysis Volume [veh/h]	784	230	123	798	181	174
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.22	0.18	0.14	0.22	0.22	0.14
s, saturation flow rate [veh/h]	3618	1296	852	3618	832	1238
c, Capacity [veh/h]	2190	785	649	2618	120	325
d1, Uniform Delay [s]	9.94	9.47	4.80	4.90	42.78	31.62
k, delay calibration	0.50	0.50	0.50	0.50	0.30	0.05
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.95	0.65	0.30	252.90	0.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

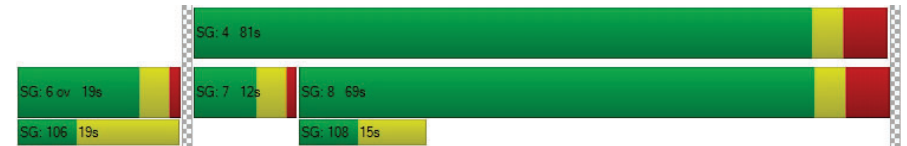
X, volume / capacity	0.36	0.29	0.19	0.30	1.51	0.53
d, Delay for Lane Group [s/veh]	10.40	10.41	5.45	5.20	295.68	32.24
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.19	2.47	0.75	2.56	11.36	3.61
50th-Percentile Queue Length [ft/ln]	104.73	61.74	18.71	63.98	284.12	90.36
95th-Percentile Queue Length [veh/ln]	7.54	4.45	1.35	4.61	19.48	6.51
95th-Percentile Queue Length [ft/ln]	188.52	111.14	33.67	115.17	486.93	162.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.40	10.41	5.45	5.20	295.68	32.24
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.40		5.23		166.55	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]			32.53			
Intersection LOS			C			
Intersection V/C			0.460			

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 47.9
Level Of Service: D
Volume to Capacity (v/c): 0.519

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	40	800	142	67	840	80	50	13	110	150	40	140
Base Volume Input [veh/h]	40	800	142	67	840	80	50	13	110	150	40	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	0	0	2	0	0	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	817	142	67	842	80	50	13	110	150	40	150
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	229	41	18	221	21	15	6	32	42	11	42
Total Analysis Volume [veh/h]	45	917	165	71	884	84	59	24	129	169	45	169
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	80	80	71	71	13	22	22
g / C, Green / Cycle	0.53	0.53	0.48	0.48	0.09	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.06	0.25	0.25	0.26	0.11	0.12	0.13
s, saturation flow rate [veh/h]	694	3618	1900	1832	1671	1828	1299
c, Capacity [veh/h]	330	1933	903	870	149	263	187
d1, Uniform Delay [s]	19.68	21.79	27.72	28.07	68.27	62.20	63.13
k, delay calibration	0.04	0.50	0.50	0.50	0.46	0.04	0.09
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.84	2.28	2.56	156.40	2.43	12.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

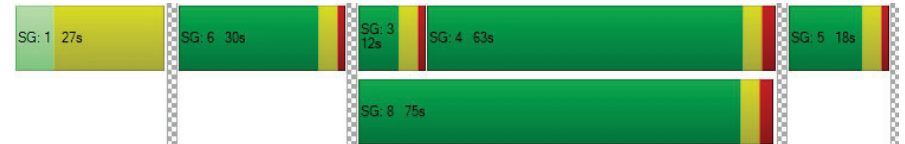
X, volume / capacity	0.14	0.47	0.54	0.56	1.26	0.81	0.90
d, Delay for Lane Group [s/veh]	19.75	22.63	30.00	30.63	224.67	64.64	76.01
Lane Group LOS	B	C	C	C	F	E	E
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.77	10.37	12.89	13.10	12.21	8.18	7.08
50th-Percentile Queue Length [ft/ln]	19.21	259.21	322.35	327.45	305.18	204.38	176.99
95th-Percentile Queue Length [veh/ln]	1.38	15.65	18.78	19.03	19.44	12.86	11.44
95th-Percentile Queue Length [ft/ln]	34.58	391.23	469.57	475.84	485.89	321.61	286.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.75	22.63	0.00	0.00	30.29	30.63	224.67	0.00	224.67	64.64	64.64	76.01
Movement LOS	B	C			C	C	F		F	E	E	E
d_A, Approach Delay [s/veh]	22.49		30.32			224.67			69.66			
Approach LOS	C		C			F			E			
d_I, Intersection Delay [s/veh]	47.94											
Intersection LOS	D											
Intersection V/C	0.519											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 24.4
 Level Of Service: C
 Volume to Capacity (v/c): 0.528

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	300	710	1010	70	110	660
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	300	727	1012	70	110	660
Peak Hour Factor	0.9528	0.9528	0.9744	0.9744	0.9594	0.9594
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	191	260	18	29	172
Total Analysis Volume [veh/h]	315	763	1039	72	115	688
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	13	80	80	80	14	31
g / C, Green / Cycle	0.11	0.66	0.66	0.66	0.11	0.26
(v / s)_i Volume / Saturation Flow Rate	0.09	0.21	0.29	0.05	0.09	0.24
s, saturation flow rate [veh/h]	3514	3618	3618	1347	1228	2859
c, Capacity [veh/h]	379	2403	2403	895	138	740
d1, Uniform Delay [s]	52.42	8.57	9.48	7.14	52.07	43.36
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.83	0.35	0.57	0.18	4.80	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

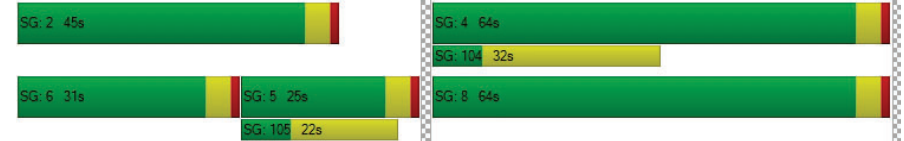
X, volume / capacity	0.83	0.32	0.43	0.08	0.83	0.93
d, Delay for Lane Group [s/veh]	54.25	8.91	10.05	7.32	56.88	45.74
Lane Group LOS	D	A	B	A	E	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.74	4.13	6.24	0.68	3.74	10.73
50th-Percentile Queue Length [ft/ln]	118.53	103.30	156.10	16.89	93.48	268.26
95th-Percentile Queue Length [veh/ln]	8.31	7.44	10.34	1.22	6.73	16.10
95th-Percentile Queue Length [ft/ln]	207.80	185.95	258.55	30.40	168.26	402.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.25	8.91	10.05	7.32	56.88	45.74
Movement LOS	D	A	B	A	E	D
d_A, Approach Delay [s/veh]	22.16		9.87		47.33	
Approach LOS	C		A		D	
d_I, Intersection Delay [s/veh]	24.35					
Intersection LOS	C					
Intersection V/C	0.528					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 38.8
Level Of Service: D
Volume to Capacity (v/c): 0.573

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Northbound				Northeastbound				Southwestbound			
Approach												
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd			Pico Blvd					
					60	100	80	3	340	98	180	220	
Base Volume Input [veh/h]	0	0	0	0	60	100	80	3	340	98	180	220	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	12	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	0	0	0	60	100	80	3	340	98	180	232	
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319	
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	0	0	0	0	20	33	26	1	90	26	48	62	
Total Analysis Volume [veh/h]	0	0	0	0	79	132	106	3	358	103	193	249	
Presence of On-Street Parking					No				No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	6				70				188				
Bicycle Volume [bicycles/h]	33				8				56				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk					No						No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall					Yes				Yes		Yes	
Maximum Recall					No				No		No	
Pedestrian Recall					No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	62	62	62
g / C, Green / Cycle	0.42	0.42	0.42	0.52	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.08	0.28	0.10	0.17
s, saturation flow rate [veh/h]	1159	1900	1355	1264	1900	1460
c, Capacity [veh/h]	462	797	568	684	987	758
d1, Uniform Delay [s]	27.44	21.62	22.07	19.12	15.41	16.70
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.80	0.42	0.79	2.86	0.44	1.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.16	0.20	0.52	0.20	0.33
d, Delay for Lane Group [s/veh]	28.25	22.04	22.86	21.98	15.86	17.85
Lane Group LOS	C	C	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.68	2.25	2.14	6.30	2.89	4.12
50th-Percentile Queue Length [ft/ln]	42.11	56.20	53.61	157.55	72.34	102.94
95th-Percentile Queue Length [veh/ln]	3.03	4.05	3.86	10.42	5.21	7.41
95th-Percentile Queue Length [ft/ln]	75.79	101.16	96.49	260.47	130.21	185.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	28.25	22.09	22.86	0.00	21.98	0.00	15.86	17.85
Movement LOS					C	C	C		C		B	B
d_A, Approach Delay [s/veh]	0.00				23.88				19.22			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	38.85											
Intersection LOS	D											
Intersection V/C	0.573											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	750	120	140	1270	65	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	0	-3	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	755	120	137	1274	65	40
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	200	32	38	353	17	10
Total Analysis Volume [veh/h]	1	53	801	127	152	1413	69	42
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	48	48	48
g / C, Green / Cycle	0.29	0.29	0.29	0.40	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.10	0.16	0.38	0.39
s, saturation flow rate [veh/h]	371	3618	1280	950	1900	1863
c, Capacity [veh/h]	60	1061	375	333	767	752
d1, Uniform Delay [s]	59.98	38.47	33.25	26.46	34.62	34.92
k, delay calibration	0.04	0.04	0.04	0.04	0.29	0.39
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.29	0.42	0.20	0.36	15.52	21.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

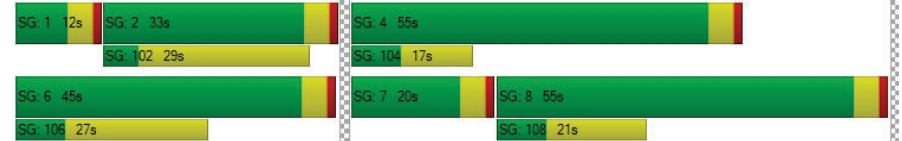
X, volume / capacity	0.88	0.75	0.34	0.46	0.95	0.96
d, Delay for Lane Group [s/veh]	74.28	38.89	33.45	26.83	50.14	56.50
Lane Group LOS	E	D	C	C	D	E
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.85	10.69	2.93	2.85	23.43	24.69
50th-Percentile Queue Length [ft/ln]	46.30	267.16	73.32	71.30	585.65	617.15
95th-Percentile Queue Length [veh/ln]	3.33	16.05	5.28	5.13	31.36	32.83
95th-Percentile Queue Length [ft/ln]	83.33	401.19	131.97	128.34	784.09	820.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	74.28	38.89	33.45	26.83	53.22	0.00	56.50
Movement LOS		E	D	C	C	D		E
d_A, Approach Delay [s/veh]	40.10			50.81				
Approach LOS	D			D				
d_I, Intersection Delay [s/veh]	38.85							
Intersection LOS	D							
Intersection V/C	0.573							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 66.3
 Level Of Service: E
 Volume to Capacity (v/c): 0.392

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	70	120	180	0	20	70	80	0	20	260	70	0	120	360	70
Base Volume Input [veh/h]	0	70	120	180	0	20	70	80	0	20	260	70	0	120	360	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-1	0	-9	0	0	0	0	0	0	6	0	0	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	69	120	171	0	20	70	80	0	20	266	70	0	126	360	70
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	1.000	0.868	0.868	0.868	1.000	0.968	0.968	0.968
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	18	32	46	0	5	19	22	0	6	77	20	0	33	93	18
Total Analysis Volume [veh/h]	0	74	128	182	0	22	76	87	0	23	306	81	0	130	372	72
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall										No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.27	0.02	0.08	0.05	0.12	0.12	0.12
s, saturation flow rate [veh/h]	1242	1690	686	961	3618	1577	1090	1900	1773
c, Capacity [veh/h]	73	262	140	431	1709	745	507	898	838
d1, Uniform Delay [s]	50.02	42.26	41.78	20.09	15.20	14.67	20.52	15.81	15.86
k, delay calibration	0.04	0.08	0.30	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	32.70	89.07	172.04	0.24	0.23	0.29	1.22	0.68	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

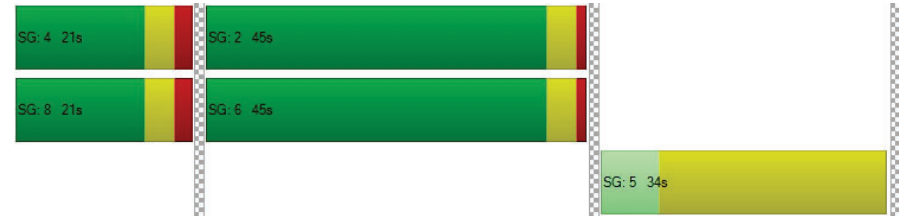
X, volume / capacity	1.01	1.18	1.32	0.05	0.18	0.11	0.26	0.25	0.26
d, Delay for Lane Group [s/veh]	82.71	131.33	213.82	20.33	15.43	14.97	21.74	16.49	16.60
Lane Group LOS	F	F	F	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.47	12.81	10.13	0.37	2.02	1.06	2.21	3.20	3.08
50th-Percentile Queue Length [ft/ln]	61.73	320.13	253.23	9.24	50.46	26.61	55.19	80.07	76.88
95th-Percentile Queue Length [veh/ln]	4.44	20.10	17.07	0.67	3.63	1.92	3.97	5.76	5.54
95th-Percentile Queue Length [ft/ln]	111.11	502.62	426.77	16.63	90.83	47.89	99.35	144.12	138.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	82.71	82.71	131.3	131.3	213.8	213.8	213.8	213.8	20.33	20.33	15.43	14.97	21.74	21.74	16.53	16.60
Movement LOS	F	F	F	F	F	F	F	F	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	121.96				213.82				15.62				17.72			
Approach LOS	F				F				B				B			
d_I, Intersection Delay [s/veh]	66.30															
Intersection LOS	E															
Intersection V/C	0.392															

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	90	220	130	30	160	40	60	80	60	70	100	90
Base Volume Input [veh/h]	90	220	130	30	160	40	60	80	60	70	100	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	-4	-10	0	-1	6	0	0	0	-1	38	-5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	216	120	30	159	46	60	80	60	69	138	85
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	57	32	9	47	14	18	25	18	20	39	24
Total Analysis Volume [veh/h]	122	228	127	35	188	54	74	99	74	78	157	96
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	13	13	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	27	27	27	27	27	43	43
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.11	0.12	0.08	0.03	0.13	0.19	0.30
s, saturation flow rate [veh/h]	1156	1900	1549	1171	1807	1294	1100
c, Capacity [veh/h]	218	511	416	236	485	602	516
d1, Uniform Delay [s]	42.69	30.38	29.12	38.14	30.87	19.57	23.32
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	0.23	0.15	0.11	0.30	2.06	6.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

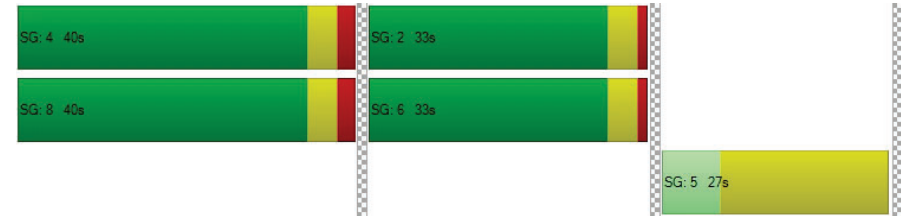
X, volume / capacity	0.56	0.45	0.31	0.15	0.50	0.41	0.64
d, Delay for Lane Group [s/veh]	43.53	30.61	29.27	38.25	31.17	21.63	29.32
Lane Group LOS	D	C	C	D	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.94	4.48	2.39	0.76	4.84	4.19	7.01
50th-Percentile Queue Length [ft/ln]	73.38	112.12	59.87	18.91	121.04	104.87	175.28
95th-Percentile Queue Length [veh/ln]	5.28	7.96	4.31	1.36	8.45	7.55	11.35
95th-Percentile Queue Length [ft/ln]	132.09	198.94	107.77	34.03	211.26	188.76	283.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.53	30.61	29.27	38.25	31.17	31.17	21.63	21.63	21.63	29.32	29.32	29.32
Movement LOS	D	C	C	D	C	C	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	33.56			32.06			21.63			29.32		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	29.98											
Intersection LOS	C											
Intersection V/C	0.435											

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 89.4
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.038

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	80	210	180	70	150	70	80	140	70	60	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-5	9	-9	52	38	46	-1	-17	-7	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	219	171	122	188	116	79	123	63	60	172	206
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	62	48	34	52	32	21	33	17	17	49	59
Total Analysis Volume [veh/h]	84	247	193	136	209	129	86	133	68	69	198	237
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.08	0.13	0.24	0.12	0.19	0.80	0.04	0.70	0.15
s, saturation flow rate [veh/h]	1059	1900	800	1151	1741	275	1570	379	1581
c, Capacity [veh/h]	73	370	156	137	339	188	789	236	795
d1, Uniform Delay [s]	49.97	37.26	40.25	48.64	40.23	33.69	12.92	27.24	14.54
k, delay calibration	0.04	0.04	0.36	0.04	0.20	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	83.18	0.78	140.64	20.86	30.71	116.23	0.21	98.63	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

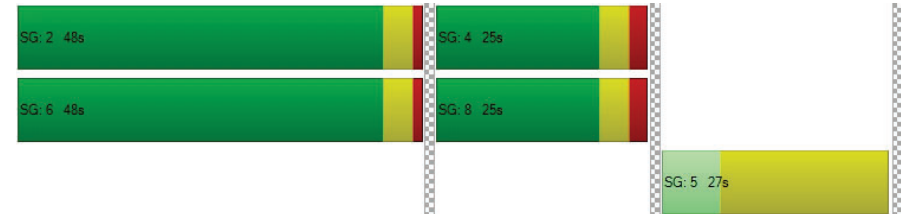
X, volume / capacity	1.16	0.67	1.24	1.00	1.00	1.16	0.09	1.13	0.30
d, Delay for Lane Group [s/veh]	133.15	38.04	180.88	69.50	70.94	149.91	13.13	125.87	15.49
Lane Group LOS	F	D	F	E	E	F	B	F	B
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	3.47	5.55	9.80	4.14	10.97	10.77	0.82	9.40	3.25
50th-Percentile Queue Length [ft/ln]	86.68	138.74	245.07	103.62	274.23	269.21	20.56	235.06	81.31
95th-Percentile Queue Length [veh/ln]	6.24	9.41	16.41	7.46	16.40	17.76	1.48	15.60	5.85
95th-Percentile Queue Length [ft/ln]	156.03	235.32	410.20	186.52	410.03	444.03	37.01	390.10	146.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	133.15	38.04	180.88	69.50	70.94	70.94	149.91	149.91	13.13	125.87	125.87	15.49
Movement LOS	F	D	F	E	E	E	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	105.90			70.52			117.51			73.97		
Approach LOS	F			E			F			E		
d_I, Intersection Delay [s/veh]	89.39											
Intersection LOS	F											
Intersection V/C	1.038											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.6
Level Of Service: C
Volume to Capacity (v/c): 0.288

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	50	210	100	70	170	40	70	150	100	70	160	200
Base Volume Input [veh/h]	50	210	100	70	170	40	70	150	100	70	160	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	4	27	0	-2	0	0	0	0	-9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	218	100	74	197	40	68	150	100	70	160	191
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	65	30	20	53	11	18	39	26	20	46	55
Total Analysis Volume [veh/h]	59	258	119	79	211	43	71	157	105	81	185	220
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	23	45	45	45	45	45
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.45	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.08	0.07	0.14	0.06	0.15	0.07	0.10	0.14
s, saturation flow rate [veh/h]	1143	1900	1466	1139	1832	1218	1749	1135	1900	1560
c, Capacity [veh/h]	169	438	338	172	423	521	782	448	850	698
d1, Uniform Delay [s]	44.12	34.24	32.20	44.67	34.35	21.16	17.97	24.09	16.93	17.79
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.47	0.23	0.71	0.51	0.54	1.15	0.89	0.59	1.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

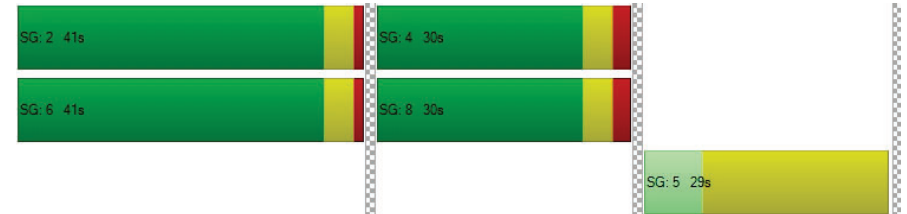
X, volume / capacity	0.35	0.59	0.35	0.46	0.60	0.14	0.33	0.18	0.22	0.32
d, Delay for Lane Group [s/veh]	44.58	34.71	32.43	45.38	34.86	21.70	19.13	24.97	17.52	18.97
Lane Group LOS	D	C	C	D	C	C	B	C	B	B
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.41	5.51	2.39	1.92	5.44	1.17	4.03	1.46	2.65	3.37
50th-Percentile Queue Length [ft/ln]	35.21	137.64	59.63	47.98	136.05	29.17	100.66	36.50	66.25	84.18
95th-Percentile Queue Length [veh/ln]	2.53	9.35	4.29	3.45	9.27	2.10	7.25	2.63	4.77	6.06
95th-Percentile Queue Length [ft/ln]	63.37	233.84	107.34	86.37	231.69	52.51	181.18	65.70	119.25	151.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.58	34.71	32.43	45.38	34.86	34.86	21.70	19.13	19.13	24.97	17.52	18.97
Movement LOS	D	C	C	D	C	C	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	35.42		37.36			19.68			19.42			
Approach LOS	D		D			B			B			
d_I, Intersection Delay [s/veh]	27.63											
Intersection LOS	C											
Intersection V/C	0.288											

Sequence

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



Intersection Level Of Service Report

Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 35.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.340

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	20	250	0	29	320	60	66	90	0	90	210
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	27	0	0	0	0	0	10	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	254	0	29	347	60	66	90	0	90	220	123
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	68	0	8	93	16	20	27	0	24	58	33
Total Analysis Volume [veh/h]	21	273	0	31	373	64	79	108	0	96	234	131
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	29	62	62
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.02	0.15	0.20	0.05	0.13	0.14
s, saturation flow rate [veh/h]	1005	1863	1863	1376	1864	1525
c, Capacity [veh/h]	100	454	454	336	956	782
d1, Uniform Delay [s]	56.54	40.20	42.89	35.98	16.43	16.55
k, delay calibration	0.04	0.04	0.35	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.48	11.27	0.10	0.66	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.60	0.82	0.19	0.26	0.27
d, Delay for Lane Group [s/veh]	56.92	40.67	54.16	36.08	17.09	17.40
Lane Group LOS	E	D	D	D	B	B
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.64	7.21	11.73	1.49	4.06	3.54
50th-Percentile Queue Length [ft/ln]	15.90	180.14	293.35	37.34	101.60	88.40
95th-Percentile Queue Length [veh/ln]	1.14	11.61	17.35	2.69	7.32	6.36
95th-Percentile Queue Length [ft/ln]	28.61	290.19	433.79	67.21	182.88	159.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.92	40.67	0.00	0.00	54.16	36.08	0.00	0.00	0.00	17.09	17.20	17.40
Movement LOS	E	D			D	D				B	B	B
d_A, Approach Delay [s/veh]	41.83		51.51		0.00		17.24					
Approach LOS	D		D		A		B					
d_I, Intersection Delay [s/veh]	35.87											
Intersection LOS	D											
Intersection V/C	0.340											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 25.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.443

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	60	210	130	110	340	80	50	230	40	310	620	80
Base Volume Input [veh/h]	60	210	130	110	340	80	50	230	40	310	620	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	14	4	0	0	-3	0	0	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	214	130	124	344	80	50	227	40	310	632	80
Peak Hour Factor	0.9142	0.9142	0.9142	0.8503	0.8503	0.8503	0.9531	0.9531	0.9531	0.9548	0.9548	0.9548
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	59	36	36	101	24	13	60	10	81	165	21
Total Analysis Volume [veh/h]	66	234	142	146	405	94	52	238	42	325	662	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	41	41	41	51	51	51	30	15	15	30	22	22
g / C, Green / Cycle	0.46	0.46	0.46	0.57	0.57	0.57	0.33	0.16	0.16	0.33	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.12	0.21	0.06	0.07	0.07	0.08	0.23	0.20	0.21
s, saturation flow rate [veh/h]	992	1900	1548	1266	1900	1570	791	1900	1652	1419	1900	1769
c, Capacity [veh/h]	388	864	704	744	1076	889	327	313	272	509	455	424
d1, Uniform Delay [s]	22.90	15.27	14.74	9.55	10.77	9.01	22.53	33.94	34.26	24.93	32.55	32.82
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.09	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.95	0.77	0.64	0.59	1.01	0.24	0.08	0.38	0.54	6.04	3.41	5.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

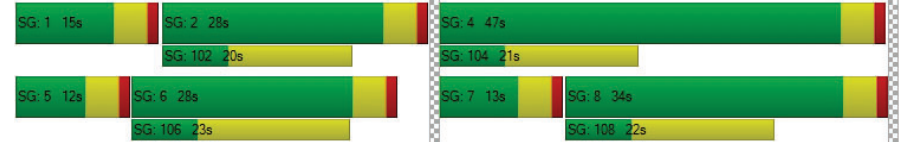
X, volume / capacity	0.17	0.27	0.20	0.20	0.38	0.11	0.16	0.45	0.51	0.64	0.84	0.86
d, Delay for Lane Group [s/veh]	23.85	16.04	15.38	10.14	11.78	9.25	22.62	34.32	34.80	30.97	35.96	38.00
Lane Group LOS	C	B	B	B	B	A	C	C	C	C	D	D
Critical Lane Group	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.10	2.99	1.77	1.35	4.28	0.83	0.74	2.76	2.72	6.25	8.00	7.94
50th-Percentile Queue Length [ft/ln]	27.49	74.75	44.23	33.74	106.98	20.80	18.41	69.10	67.91	156.14	199.89	198.56
95th-Percentile Queue Length [veh/ln]	1.98	5.38	3.18	2.43	7.67	1.50	1.33	4.98	4.89	10.34	12.63	12.56
95th-Percentile Queue Length [ft/ln]	49.48	134.55	79.61	60.72	191.79	37.44	33.14	124.39	122.24	258.61	315.82	314.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.85	16.04	15.38	10.14	11.78	9.25	22.62	34.52	34.80	30.97	36.82	38.00
Movement LOS	C	B	B	B	B	A	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	17.00			11.04			32.69			35.14		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	25.35											
Intersection LOS	C											
Intersection V/C	0.443											

Sequence

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



Intersection Level Of Service Report

Intersection 29: FOURTH STREET/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 7.9
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.325

Intersection Setup

Name	4th St			4th St			California Ave			California Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			0.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			California Ave			California Ave		
	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Input [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Peak Hour Factor	0.8437	0.8437	0.8437	0.9285	0.9285	0.9285	0.8506	0.8506	0.8506	0.9047	0.9047	0.9047
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	59	16	3	48	5	6	48	14	7	34	15
Total Analysis Volume [veh/h]	72	235	63	13	193	18	26	194	56	28	136	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	62			70			38			61		
Bicycle Volume [bicycles/h]	22			16			7			12		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	25	25	25	25	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	30	30	30	30	30	30	30	30	30	30	30	30
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	17	17	17	17	17	17	15	15	15	15	15	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C
C, Cycle Length [s]	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	11	11	11	10	10
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.01	0.11	0.16	0.13
s, saturation flow rate [veh/h]	1152	1773	1053	1855	1755	1677
c, Capacity [veh/h]	493	653	420	683	715	692
d1, Uniform Delay [s]	9.89	7.44	10.59	6.98	8.09	7.87
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.19	0.01	0.09	0.13	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

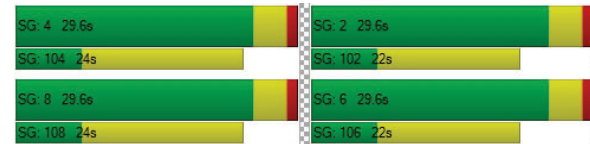
X, volume / capacity	0.15	0.46	0.03	0.31	0.39	0.32
d, Delay for Lane Group [s/veh]	9.94	7.62	10.60	7.08	8.22	7.97
Lane Group LOS	A	A	B	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	0.86	0.05	0.57	1.39	0.70
50th-Percentile Queue Length [ft/ln]	6.94	21.50	1.33	14.18	34.81	17.46
95th-Percentile Queue Length [veh/ln]	0.50	1.55	0.10	1.02	2.51	1.26
95th-Percentile Queue Length [ft/ln]	12.50	38.69	2.39	25.52	62.65	31.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.94	7.62	7.62	10.60	7.08	7.08	8.22	8.22	8.22	7.97	7.97	7.97
Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.07			7.28			8.22			7.97		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.93											
Intersection LOS	A											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.294

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	50	130	100	110	180	60	20	370	80	130	520	110
Base Volume Input [veh/h]	50	130	100	110	180	60	20	370	80	130	520	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	-3	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	130	100	110	180	60	20	370	77	130	525	110
Peak Hour Factor	0.7730	0.7730	0.7730	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	42	32	30	48	16	5	98	20	36	145	30
Total Analysis Volume [veh/h]	65	168	129	118	194	65	21	394	82	143	579	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.10	0.10	0.04	0.03	0.11	0.05	0.12	0.19	0.19
s, saturation flow rate [veh/h]	1208	1900	1577	1237	1900	1581	758	3618	1579	1180	1900	1769
c, Capacity [veh/h]	171	368	306	190	368	307	203	1187	518	546	844	786
d1, Uniform Delay [s]	44.63	35.73	35.47	45.30	36.27	33.97	35.23	25.40	23.87	17.23	19.09	19.15
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	0.33	0.34	1.23	0.43	0.13	1.02	0.75	0.65	0.09	1.58	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

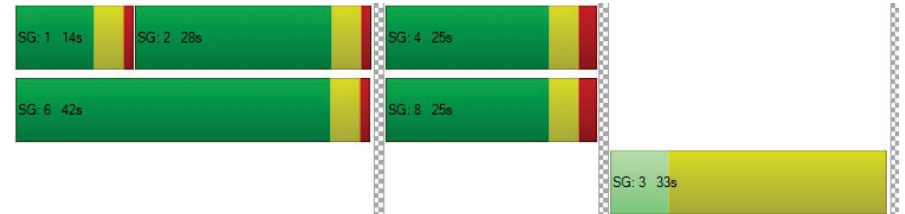
X, volume / capacity	0.38	0.46	0.42	0.62	0.53	0.21	0.10	0.33	0.16	0.26	0.43	0.43
d, Delay for Lane Group [s/veh]	45.14	36.06	35.82	46.53	36.71	34.09	36.25	26.15	24.52	17.32	20.67	20.87
Lane Group LOS	D	D	D	D	D	C	D	C	C	B	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.56	3.59	2.74	2.94	4.22	1.32	0.49	3.61	1.46	1.97	5.96	5.66
50th-Percentile Queue Length [ft/ln]	39.12	89.80	68.54	73.50	105.40	32.99	12.29	90.35	36.48	49.16	149.11	141.51
95th-Percentile Queue Length [veh/ln]	2.82	6.47	4.94	5.29	7.58	2.38	0.88	6.51	2.63	3.54	9.97	9.56
95th-Percentile Queue Length [ft/ln]	70.41	161.64	123.38	132.29	189.59	59.38	22.12	162.64	65.67	88.50	249.24	239.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.14	36.06	35.82	46.53	36.71	34.09	36.25	26.15	24.52	17.32	20.75	20.87
Movement LOS	D	D	D	D	D	C	D	C	C	B	C	C
d_A, Approach Delay [s/veh]	37.60			39.33			26.31			20.19		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.15											
Intersection LOS	C											
Intersection V/C	0.294											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 30.6
Level Of Service: C
Volume to Capacity (v/c): 0.378

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	40	160	60	50	290	60	30	150	100	60	190	50
Base Volume Input [veh/h]	40	160	60	50	290	60	30	150	100	60	190	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	-5	2	0	-4	-6	0	25	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	160	60	50	285	62	30	146	94	60	215	50
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	45	17	16	91	20	9	41	27	17	60	14
Total Analysis Volume [veh/h]	51	181	68	64	366	80	34	166	107	66	238	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	40	40	40	40	40	40	27
g / C, Green / Cycle	0.40	0.40	0.40	0.40	0.40	0.40	0.27
(v / s)_i Volume / Saturation Flow Rate	0.05	0.10	0.04	0.05	0.12	0.12	0.20
s, saturation flow rate [veh/h]	959	1900	1555	1222	1900	1760	1519
c, Capacity [veh/h]	360	767	628	465	767	711	455
d1, Uniform Delay [s]	25.88	19.64	18.58	24.31	20.20	20.28	32.15
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	0.72	0.35	0.62	0.99	1.11	2.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

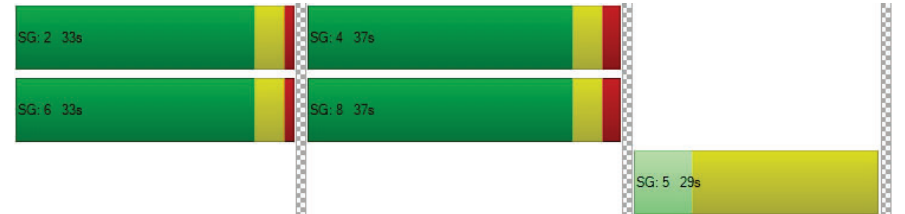
X, volume / capacity	0.14	0.24	0.11	0.14	0.30	0.31	0.67	0.84
d, Delay for Lane Group [s/veh]	26.70	20.36	18.93	24.93	21.19	21.39	34.57	47.60
Lane Group LOS	C	C	B	C	C	C	C	D
Critical Lane Group	No	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.96	2.84	1.02	1.14	3.70	3.55	6.83	9.81
50th-Percentile Queue Length [ft/ln]	24.04	71.03	25.40	28.55	92.49	88.85	170.71	245.20
95th-Percentile Queue Length [veh/ln]	1.73	5.11	1.83	2.06	6.66	6.40	11.11	14.94
95th-Percentile Queue Length [ft/ln]	43.26	127.86	45.71	51.39	166.48	159.93	277.85	373.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.70	20.36	18.93	24.93	21.26	21.39	34.57	34.57	34.57	47.60	47.60	47.60
Movement LOS	C	C	B	C	C	C	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.12			21.74			34.57			47.60		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.57											
Intersection LOS	C											
Intersection V/C	0.378											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 28.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.292

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	60	180	80	70	310	30	0	280	130	0	360
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	-12	0	0	28	-1	0	8	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	183	80	70	298	30	0	308	129	0	368	72
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	55	24	19	80	8	0	83	35	0	105	21
Total Analysis Volume [veh/h]	73	222	97	76	322	32	0	333	140	0	419	82
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	50	50	50	19	19	19	19
g / C, Green / Cycle	0.50	0.50	0.50	0.50	0.50	0.50	0.19	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.06	0.06	0.09	0.10	0.18	0.09	0.13	0.14
s, saturation flow rate [veh/h]	1043	1900	1583	1177	1900	1832	1900	1562	1900	1781
c, Capacity [veh/h]	511	954	795	552	954	920	370	304	370	347
d1, Uniform Delay [s]	18.01	14.04	13.20	18.76	13.68	13.71	39.29	35.59	37.33	37.71
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.07	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.57	0.31	0.52	0.44	0.46	5.77	0.40	0.81	1.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

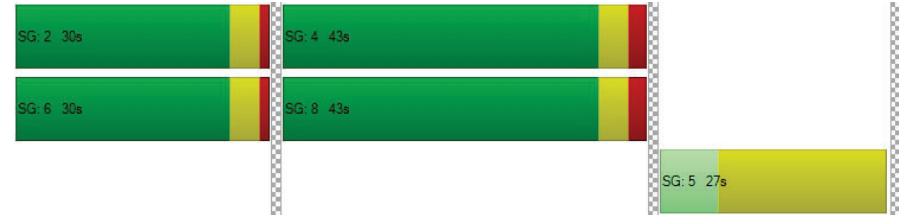
X, volume / capacity	0.14	0.23	0.12	0.14	0.19	0.19	0.90	0.46	0.68	0.72
d, Delay for Lane Group [s/veh]	18.60	14.61	13.52	19.28	14.12	14.16	45.06	36.00	38.14	38.78
Lane Group LOS	B	B	B	B	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.10	2.84	1.17	1.16	2.23	2.19	8.46	3.03	5.71	5.78
50th-Percentile Queue Length [ft/ln]	27.48	71.01	29.37	29.06	55.72	54.70	211.49	75.75	142.63	144.57
95th-Percentile Queue Length [veh/ln]	1.98	5.11	2.11	2.09	4.01	3.94	13.23	5.45	9.62	9.73
95th-Percentile Queue Length [ft/ln]	49.46	127.83	52.87	52.30	100.29	98.46	330.73	136.36	240.56	243.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.60	14.61	13.52	19.28	14.14	14.16	0.00	45.06	36.00	0.00	38.40	38.78
Movement LOS	B	B	B	B	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	15.08			15.05			42.38			38.46		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	28.78											
Intersection LOS	C											
Intersection V/C	0.292											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 40.6
Level Of Service: D
Volume to Capacity (v/c): 0.487

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	150	280	110	80	420	80	0	210	120	190	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-4	3	0	0	-11	-2	0	-2	5	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	283	110	80	409	78	0	208	125	190	337	80
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	82	32	26	131	25	0	58	35	54	96	23
Total Analysis Volume [veh/h]	169	327	127	103	526	100	0	232	139	217	386	92
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	13	48	48	59	41	41	17	34	29	29	29
g / C, Green / Cycle	0.11	0.40	0.40	0.49	0.34	0.34	0.14	0.29	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.09	0.17	0.08	0.09	0.17	0.17	0.12	0.09	0.16	0.20	0.06
s, saturation flow rate [veh/h]	1810	1900	1568	1187	1900	1779	1900	1558	1391	1900	1564
c, Capacity [veh/h]	197	754	622	536	655	614	265	446	285	455	375
d1, Uniform Delay [s]	52.59	26.37	23.75	17.54	31.01	31.09	50.65	33.55	43.03	43.57	36.89
k, delay calibration	0.06	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.50	0.14	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.96	1.81	0.74	0.80	2.61	2.86	3.62	0.15	17.24	5.75	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.43	0.20	0.19	0.49	0.50	0.88	0.31	0.76	0.85	0.25
d, Delay for Lane Group [s/veh]	58.55	28.18	24.49	18.34	33.62	33.95	54.27	33.70	60.27	49.31	37.01
Lane Group LOS	E	C	C	B	C	C	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.28	7.09	2.47	1.63	7.72	7.38	7.09	3.21	6.85	11.51	2.19
50th-Percentile Queue Length [ft/ln]	132.05	177.16	61.86	40.69	193.03	184.45	177.24	80.17	171.35	287.68	54.71
95th-Percentile Queue Length [veh/ln]	9.05	11.45	4.45	2.93	12.28	11.83	11.46	5.77	11.15	17.07	3.94
95th-Percentile Queue Length [ft/ln]	226.28	286.31	111.35	73.24	306.95	295.82	286.40	144.31	278.70	426.76	98.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.55	28.18	24.49	18.34	33.75	33.95	0.00	54.27	33.70	60.27	49.31	37.01
Movement LOS	E	C	C	B	C	C		D	C	E	D	D
d_A, Approach Delay [s/veh]	35.67			31.60			46.56			51.11		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	40.55											
Intersection LOS	D											
Intersection V/C	0.487											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.432

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T						T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	190	530	0	0	730	100	181	0	84	190	140	30
Base Volume Input [veh/h]	190	530	0	0	730	100	181	0	84	190	140	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	-1	0	0	-5	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	529	0	0	725	100	181	0	84	190	140	30
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	158	0	0	200	28	52	0	24	52	38	8
Total Analysis Volume [veh/h]	243	632	0	0	800	110	208	0	96	209	154	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8	
Auxiliary Signal Groups									3				
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7	
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40	
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6	
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0	
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71	
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7	
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17	
Rest in Walk													
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6	
Minimum Recall	No	Yes			Yes						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	75	75	61	61	16	16
g / C, Green / Cycle	0.62	0.62	0.51	0.51	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.30	0.17	0.24	0.25	0.12	0.11
s, saturation flow rate [veh/h]	812	3618	1900	1800	1810	1669
c, Capacity [veh/h]	489	2255	964	913	241	223
d1, Uniform Delay [s]	12.74	10.32	19.16	19.50	50.97	50.77
k, delay calibration	0.35	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.51	0.31	1.66	1.94	3.66	3.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.28	0.47	0.50	0.87	0.84
d, Delay for Lane Group [s/veh]	15.24	10.63	20.82	21.45	54.63	54.04
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.05	3.80	8.40	8.59	6.45	5.73
50th-Percentile Queue Length [ft/ln]	76.36	94.99	210.03	214.77	161.14	143.20
95th-Percentile Queue Length [veh/ln]	5.50	6.84	13.15	13.40	10.61	9.65
95th-Percentile Queue Length [ft/ln]	137.46	170.98	328.87	334.94	265.23	241.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.24	10.63	0.00	0.00	21.09	21.45	0.00	0.00	0.00	54.63	54.04	54.04
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	11.91		21.14			0.00		54.35				
Approach LOS	B		C			A		D				
d_I, Intersection Delay [s/veh]	23.47											
Intersection LOS	C											
Intersection V/C	0.432											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 28.9
Level Of Service: C
Volume to Capacity (v/c): 0.583

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		860	410
	Northbound		Southbound			
Base Volume Input [veh/h]	320	0	0	930	860	410
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-3	0	0	-5	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	317	0	0	925	860	425
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	91	0	0	262	236	117
Total Analysis Volume [veh/h]	362	0	0	1046	945	467
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	73	73	38	38
g / C, Green / Cycle	0.61	0.61	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.10	0.29	0.27	0.29
s, saturation flow rate [veh/h]	3618	3618	3514	1587
c, Capacity [veh/h]	2199	2199	1108	500
d1, Uniform Delay [s]	10.24	12.96	38.40	39.79
k, delay calibration	0.50	0.50	0.04	0.26
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.74	0.74	16.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.48	0.85	0.93
d, Delay for Lane Group [s/veh]	10.40	13.71	39.15	56.37
Lane Group LOS	B	B	D	E
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.10	7.73	12.24	14.72
50th-Percentile Queue Length [ft/ln]	52.49	193.15	306.06	368.10
95th-Percentile Queue Length [veh/ln]	3.78	12.28	17.98	21.02
95th-Percentile Queue Length [ft/ln]	94.48	307.12	449.52	525.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.40	0.00	0.00	13.71	39.15	56.37
Movement LOS	B			B	D	E
d_A, Approach Delay [s/veh]	10.40		13.71		44.84	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]			28.87			
Intersection LOS			C			
Intersection V/C			0.583			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 24.7
Level Of Service: C
Volume to Capacity (v/c): 0.558

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T			T			T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	20	290	190	350	1240	160	30	360	60	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-3	0	-2	-3	0	0	10	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	287	190	348	1237	160	30	370	60	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	73	49	97	346	45	9	111	18	0	0	0
Total Analysis Volume [veh/h]	20	294	194	389	1382	179	36	442	72	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No				
Maximum Recall	No	No		No	No			No				
Pedestrian Recall	No	No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	23	23	67	89	89	15	15	15
g / C, Green / Cycle	0.02	0.20	0.20	0.56	0.74	0.74	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.01	0.15	0.11	0.11	0.41	0.44	0.10	0.10	0.11
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1779	1883	1729	1588
c, Capacity [veh/h]	37	372	352	1978	1402	1313	238	219	201
d1, Uniform Delay [s]	58.14	45.89	43.47	12.88	6.99	7.34	51.08	51.06	51.31
k, delay calibration	0.04	0.20	0.04	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.43	6.79	0.50	0.02	1.60	1.99	2.80	2.99	4.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

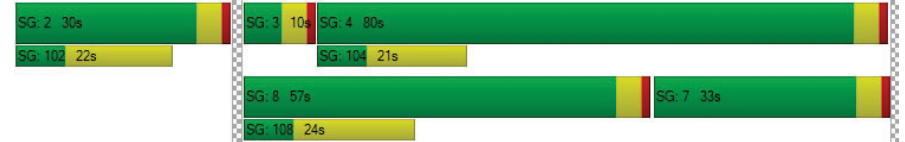
X, volume / capacity	0.54	0.79	0.55	0.20	0.56	0.59	0.83	0.82	0.86
d, Delay for Lane Group [s/veh]	62.57	52.68	43.97	12.90	8.59	9.33	53.88	54.04	55.41
Lane Group LOS	E	D	D	B	A	A	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.65	9.02	5.25	2.56	8.37	8.86	5.91	5.41	5.26
50th-Percentile Queue Length [ft/ln]	16.19	225.50	131.24	64.01	209.25	221.41	147.64	135.34	131.51
95th-Percentile Queue Length [veh/ln]	1.17	13.95	9.01	4.61	13.11	13.74	9.89	9.23	9.02
95th-Percentile Queue Length [ft/ln]	29.13	348.63	225.18	115.21	327.86	343.42	247.28	230.74	225.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	52.68	43.97	12.90	8.91	9.33	53.88	54.29	55.41	0.00	0.00	0.00
Movement LOS	E	D	D	B	A	A	D	D	E			
d_A, Approach Delay [s/veh]	49.75			9.75			54.41			0.00		
Approach LOS	D			A			D			A		
d_I, Intersection Delay [s/veh]	24.67											
Intersection LOS	C											
Intersection V/C	0.558											

Sequence

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



Intersection Level Of Service Report
Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.7
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.393

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	90	270	140	40	70	30	30	500	50	80	640	110
Base Volume Input [veh/h]	90	270	140	40	70	30	30	500	50	80	640	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	0	0	0	0	0	0	1	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	270	146	40	70	30	30	500	50	81	645	110
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	75	40	11	18	8	8	130	13	22	173	29
Total Analysis Volume [veh/h]	100	299	162	42	74	32	31	522	52	87	691	118
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	26	61	61	61	61	61	61
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.11	0.04	0.06	0.05	0.14	0.04	0.10	0.22	0.24
s, saturation flow rate [veh/h]	1160	1900	1455	1057	1689	680	3618	1422	870	1900	1675
c, Capacity [veh/h]	293	494	378	181	439	386	2198	864	522	1154	1018
d1, Uniform Delay [s]	35.78	32.41	30.73	41.80	29.14	15.12	8.97	7.97	12.96	9.82	10.04
k, delay calibration	0.04	0.05	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.51	0.29	0.24	0.10	0.41	0.25	0.13	0.69	0.87	1.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

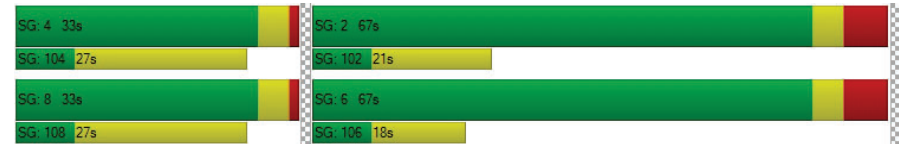
X, volume / capacity	0.34	0.61	0.43	0.23	0.24	0.08	0.24	0.06	0.17	0.36	0.39
d, Delay for Lane Group [s/veh]	36.04	32.92	31.01	42.04	29.24	15.52	9.23	8.10	13.65	10.70	11.15
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.14	6.25	3.20	0.96	1.98	0.43	2.52	0.46	1.12	4.53	4.44
50th-Percentile Queue Length [ft/ln]	53.43	156.18	80.08	24.10	49.54	10.86	63.00	11.60	27.95	113.23	111.04
95th-Percentile Queue Length [veh/ln]	3.85	10.35	5.77	1.74	3.57	0.78	4.54	0.84	2.01	8.02	7.90
95th-Percentile Queue Length [ft/ln]	96.17	258.66	144.15	43.38	89.17	19.56	113.40	20.89	50.32	200.48	197.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.04	32.92	31.01	42.04	29.24	29.24	15.52	9.23	8.10	13.65	10.88	11.15
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	32.93			32.87			9.45			11.18		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	17.68											
Intersection LOS	B											
Intersection V/C	0.393											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 21.2
Level Of Service: C
Volume to Capacity (v/c): 0.318

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	80	380	40	10	100	40	20	230	30	20	180	30
Base Volume Input [veh/h]	80	380	40	10	100	40	20	226	30	20	199	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	6	0	0	0	1	0	-4	0	0	19	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	386	40	10	100	41	20	226	30	20	199	30
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	105	11	3	30	12	6	65	9	6	60	9
Total Analysis Volume [veh/h]	93	420	44	12	118	49	23	262	35	24	240	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No				No
Maximum Recall		No			No			No				No
Pedestrian Recall		No			No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	68	68	68	68	68	23	23
g / C, Green / Cycle	0.68	0.68	0.68	0.68	0.68	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.08	0.12	0.13	0.01	0.10	0.19	0.18
s, saturation flow rate [veh/h]	1184	1900	1799	928	1732	1681	1643
c, Capacity [veh/h]	805	1290	1221	635	1176	424	415
d1, Uniform Delay [s]	7.86	5.88	5.90	7.84	5.70	36.40	35.85
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.31	0.34	0.05	0.25	2.77	2.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

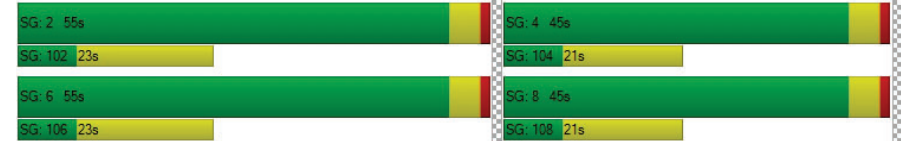
X, volume / capacity	0.12	0.18	0.19	0.02	0.14	0.76	0.72
d, Delay for Lane Group [s/veh]	8.16	6.19	6.24	7.89	5.95	39.16	38.24
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.82	1.67	1.64	0.10	1.15	7.53	6.94
50th-Percentile Queue Length [ft/ln]	20.45	41.71	40.90	2.61	28.87	188.35	173.56
95th-Percentile Queue Length [veh/ln]	1.47	3.00	2.94	0.19	2.08	12.04	11.26
95th-Percentile Queue Length [ft/ln]	36.81	75.07	73.62	4.71	51.97	300.89	281.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.16	6.21	6.24	7.89	5.95	5.95	39.16	39.16	39.16	38.24	38.24	38.24
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	6.54			6.08			39.16			38.24		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	21.19											
Intersection LOS	C											
Intersection V/C	0.318											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.380

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	130	410	110	60	120	30	30	360	40	70	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	6	22	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	413	110	60	120	30	36	382	40	70	310	42
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8552	0.8552	0.8552	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	118	31	17	34	8	11	112	12	22	97	13
Total Analysis Volume [veh/h]	148	471	125	68	135	34	42	447	47	87	387	52
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	27	27	27	27	27	59	59	59	59	59	59
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.59	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.13	0.16	0.18	0.08	0.10	0.04	0.13	0.14	0.10	0.20	0.04
s, saturation flow rate [veh/h]	1157	1900	1628	829	1751	993	1900	1774	888	1900	1407
c, Capacity [veh/h]	279	523	448	156	482	535	1126	1052	522	1126	834
d1, Uniform Delay [s]	38.62	31.36	31.91	43.97	29.08	14.85	9.54	9.61	13.51	10.41	8.61
k, delay calibration	0.04	0.04	0.08	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	0.40	1.13	0.71	0.16	0.29	0.46	0.52	0.69	0.83	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.59	0.64	0.44	0.35	0.08	0.22	0.23	0.17	0.34	0.06
d, Delay for Lane Group [s/veh]	39.20	31.76	33.04	44.68	29.24	15.13	10.00	10.12	14.20	11.24	8.75
Lane Group LOS	D	C	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.39	6.33	6.09	1.65	3.21	0.57	2.57	2.53	1.14	4.35	0.49
50th-Percentile Queue Length [ft/ln]	84.68	158.21	152.23	41.24	80.19	14.13	64.23	63.21	28.60	108.79	12.19
95th-Percentile Queue Length [veh/ln]	6.10	10.45	10.14	2.97	5.77	1.02	4.62	4.55	2.06	7.77	0.88
95th-Percentile Queue Length [ft/ln]	152.43	261.35	253.40	74.24	144.34	25.44	115.62	113.78	51.47	194.32	21.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.20	32.20	33.04	44.68	29.24	29.24	15.13	10.05	10.12	14.20	11.24	8.75
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	33.73			33.67			10.46			11.48		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.89											
Intersection LOS	C											
Intersection V/C	0.380											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.5
Level Of Service: C
Volume to Capacity (v/c): 0.388

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	Base Volume Input [veh/h]	150	490	120	40	100	90	110	250	70	60	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	-2	0	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	493	120	40	100	90	110	248	70	60	347	50
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	129	31	11	28	25	29	66	19	17	96	14
Total Analysis Volume [veh/h]	157	517	126	45	111	100	117	264	75	66	384	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	28	28	28	28	28	63	63	63	63	63
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.28	0.63	0.63	0.63	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.13	0.17	0.19	0.06	0.13	0.12	0.19	0.06	0.20	0.04
s, saturation flow rate [veh/h]	1167	1900	1675	798	1655	996	1770	1033	1900	1435
c, Capacity [veh/h]	255	532	469	150	464	581	1111	606	1193	901
d1, Uniform Delay [s]	41.07	31.39	31.80	43.08	29.69	13.53	8.57	12.44	8.68	7.20
k, delay calibration	0.04	0.05	0.08	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.90	0.60	1.23	0.41	0.26	0.78	0.71	0.36	0.71	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.62	0.66	0.30	0.45	0.20	0.31	0.11	0.32	0.06
d, Delay for Lane Group [s/veh]	41.97	31.99	33.03	43.49	29.94	14.31	9.28	12.80	9.40	7.33
Lane Group LOS	D	C	C	D	C	B	A	B	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.75	6.89	6.60	1.06	4.12	1.51	3.25	0.79	3.71	0.45
50th-Percentile Queue Length [ft/ln]	93.73	172.24	165.09	26.59	102.95	37.79	81.17	19.65	92.80	11.14
95th-Percentile Queue Length [veh/ln]	6.75	11.19	10.82	1.91	7.41	2.72	5.84	1.41	6.68	0.80
95th-Percentile Queue Length [ft/ln]	168.72	279.86	270.45	47.86	185.30	68.03	146.11	35.37	167.05	20.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.97	32.36	33.03	43.49	29.94	29.94	14.31	9.28	9.28	12.80	9.40	7.33
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	34.35			32.33			10.57			9.62		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	22.52											
Intersection LOS	C											
Intersection V/C	0.388											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 22.8
 Level Of Service: C
 Volume to Capacity (v/c): 0.427

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	660	40	20	20	120	0	0	0	6	220	70
Base Volume Input [veh/h]	14	660	40	20	20	120	0	0	0	6	220	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	663	40	20	20	120	0	0	0	6	220	70
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	182	11	6	6	35	0	0	0	2	73	23
Total Analysis Volume [veh/h]	15	729	44	24	24	142	0	0	0	6	291	93
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	41	41	3	49	40
g / C, Green / Cycle	0.41	0.41	0.03	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.20	0.03	0.01	0.10	0.21
s, saturation flow rate [veh/h]	3618	1353	1810	1588	1811
c, Capacity [veh/h]	1494	559	62	783	733
d1, Uniform Delay [s]	21.56	17.80	47.26	14.34	22.48
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.14	0.27	1.48	0.62	2.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

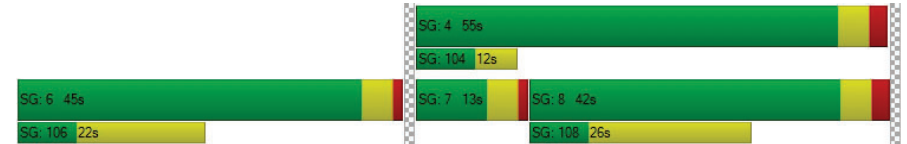
X, volume / capacity	0.49	0.08	0.39	0.21	0.52
d, Delay for Lane Group [s/veh]	22.71	18.07	48.74	14.95	25.14
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.36	0.65	0.60	2.17	7.20
50th-Percentile Queue Length [ft/ln]	158.91	16.31	15.06	54.13	179.97
95th-Percentile Queue Length [veh/ln]	10.49	1.17	1.08	3.90	11.60
95th-Percentile Queue Length [ft/ln]	262.28	29.36	27.10	97.43	289.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	22.71	18.07	48.74	14.95	14.95	0.00	0.00	0.00	0.00	25.14	25.14
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		22.44		19.22		0.00				25.14		
Approach LOS		C		B		A				C		
d_I, Intersection Delay [s/veh]		22.76										
Intersection LOS		C										
Intersection V/C		0.427										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 20.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.389

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	20	140	40	40	140	30	40	260	40	30	160	30
Base Volume Input [veh/h]	20	140	40	40	140	30	40	260	40	30	160	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	0	-4	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	140	40	40	140	30	40	256	40	30	169	30
Peak Hour Factor	0.8796	0.8796	0.8796	0.8333	0.8333	0.8333	0.9034	0.9034	0.9034	0.8483	0.8483	0.8483
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	40	11	12	42	9	11	71	11	9	50	9
Total Analysis Volume [veh/h]	33	159	45	48	168	36	44	283	44	35	199	35
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	20	71	71	71
g / C, Green / Cycle	0.20	0.20	0.71	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.16	0.18	0.21	0.14	0.02
s, saturation flow rate [veh/h]	1501	1414	1759	1719	1574
c, Capacity [veh/h]	344	328	1282	1255	1112
d1, Uniform Delay [s]	37.06	38.26	5.40	4.93	4.42
k, delay calibration	0.04	0.05	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.92	1.71	0.57	0.33	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.77	0.29	0.19	0.03
d, Delay for Lane Group [s/veh]	37.98	39.97	5.97	5.25	4.47
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/l]	5.38	6.02	2.56	1.47	0.20
50th-Percentile Queue Length [ft/l]	134.58	150.45	63.89	36.69	4.94
95th-Percentile Queue Length [veh/l]	9.19	10.04	4.60	2.64	0.36
95th-Percentile Queue Length [ft/l]	229.70	251.03	114.99	66.04	8.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.98	37.98	37.98	39.97	39.97	39.97	5.97	5.97	5.97	5.25	5.25	4.47
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	37.98			39.97			5.97			5.15		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	20.08											
Intersection LOS	C											
Intersection V/C	0.389											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.7
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.415

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	10	90	40	80	100	40	40	460	30	60	370	60
Base Volume Input [veh/h]	10	90	40	80	100	40	40	460	30	60	370	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	0	0	0	22	0	0	13	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	97	40	80	100	40	40	482	30	60	383	62
Peak Hour Factor	0.8437	0.8437	0.8437	0.7884	0.7884	0.7884	0.9314	0.9314	0.9314	0.9359	0.9359	0.9359
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	29	12	25	32	13	11	129	8	16	102	17
Total Analysis Volume [veh/h]	12	115	47	101	127	51	43	518	32	64	409	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	64	64	64	64	64	64
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.01	0.10	0.09	0.11	0.05	0.30	0.02	0.08	0.24	0.05
s, saturation flow rate [veh/h]	1069	1594	1096	1584	886	1710	1374	806	1710	1351
c, Capacity [veh/h]	181	356	195	354	529	1102	886	454	1102	871
d1, Uniform Delay [s]	40.80	33.54	43.40	33.95	12.31	9.06	6.47	15.02	8.30	6.64
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.34	0.80	0.41	0.30	1.44	0.08	0.65	0.96	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.45	0.52	0.50	0.08	0.47	0.04	0.14	0.37	0.08
d, Delay for Lane Group [s/veh]	40.85	33.88	44.20	34.36	12.61	10.50	6.54	15.67	9.26	6.81
Lane Group LOS	D	C	D	C	B	B	A	B	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.27	3.36	2.44	3.74	0.52	5.63	0.25	0.90	4.05	0.53
50th-Percentile Queue Length [ft/ln]	6.70	84.04	61.01	93.54	13.03	140.79	6.19	22.41	101.23	13.14
95th-Percentile Queue Length [veh/ln]	0.48	6.05	4.39	6.73	0.94	9.52	0.45	1.61	7.29	0.95
95th-Percentile Queue Length [ft/ln]	12.06	151.26	109.82	168.37	23.45	238.08	11.14	40.34	182.21	23.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.85	33.88	33.88	44.20	34.36	34.36	12.61	10.50	6.54	15.67	9.26	6.81
Movement LOS	D	C	C	D	C	C	B	B	A	B	A	A
d_A, Approach Delay [s/veh]	34.36			37.92			10.44			9.72		
Approach LOS	C			D			B			A		
d_I, Intersection Delay [s/veh]	17.66											
Intersection LOS	B											
Intersection V/C	0.415											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	19.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.362

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	30	240	30	50	160	30	30	270	40	30	190	50
Base Volume Input [veh/h]	30	240	30	50	160	30	30	270	40	30	190	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	0	0	0	0	0	-4	0	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	240	30	50	160	30	30	266	40	30	200	50
Peak Hour Factor	0.9166	0.9166	0.9166	0.8625	0.8625	0.8625	0.8118	0.8118	0.8118	0.8521	0.8521	0.8521
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	65	8	14	46	9	9	82	12	9	59	15
Total Analysis Volume [veh/h]	32	262	33	58	186	35	37	328	49	35	235	59
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	66	66	66
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.03	0.16	0.05	0.12	0.20	0.03	0.19
s, saturation flow rate [veh/h]	1147	1848	1095	1805	1804	1571	1728
c, Capacity [veh/h]	203	457	155	446	1232	1038	1182
d1, Uniform Delay [s]	40.35	33.72	45.08	32.29	7.11	5.93	7.01
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	0.58	0.56	0.32	0.61	0.09	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.65	0.37	0.50	0.30	0.05	0.28
d, Delay for Lane Group [s/veh]	40.48	34.30	45.64	32.61	7.73	6.02	7.59
Lane Group LOS	D	C	D	C	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.73	6.49	1.43	4.64	3.05	0.34	2.71
50th-Percentile Queue Length [ft/ln]	18.26	162.20	35.86	116.04	76.24	8.57	67.83
95th-Percentile Queue Length [veh/ln]	1.32	10.67	2.58	8.18	5.49	0.62	4.88
95th-Percentile Queue Length [ft/ln]	32.88	266.64	64.55	204.38	137.24	15.42	122.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.48	34.30	34.30	45.64	32.61	32.61	7.73	7.73	6.02	7.59	7.59	7.59
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.90			35.32			7.53			7.59		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	19.93											
Intersection LOS	B											
Intersection V/C	0.362											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 18.8
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.392

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	40	170	40	100	150	40	40	540	40	30	450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	22	0	-2	15	-1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	170	40	100	150	40	40	562	40	28	465	79
Peak Hour Factor	0.8983	0.8983	0.8983	0.7948	0.7948	0.7948	0.9768	0.9768	0.9768	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	47	11	31	47	13	10	144	10	7	124	21
Total Analysis Volume [veh/h]	45	189	45	126	189	50	41	575	41	30	494	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	60	60	60	60	60	60
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.11	0.13	0.04	0.16	0.17	0.04	0.26	0.05
s, saturation flow rate [veh/h]	1148	1822	1155	1812	914	1900	1843	815	1900	1549
c, Capacity [veh/h]	214	478	218	475	487	1151	1117	489	1151	938
d1, Uniform Delay [s]	39.94	31.20	42.74	31.32	15.61	9.28	9.30	12.34	10.49	8.21
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.29	0.90	0.31	0.34	0.58	0.60	0.24	1.17	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.49	0.58	0.50	0.08	0.27	0.27	0.06	0.43	0.09
d, Delay for Lane Group [s/veh]	40.12	31.49	43.64	31.63	15.95	9.86	9.90	12.58	11.66	8.40
Lane Group LOS	D	C	D	C	B	A	A	B	B	A
Critical Lane Group	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.03	4.82	3.10	4.94	0.57	3.19	3.14	0.36	5.76	0.77
50th-Percentile Queue Length [ft/ln]	25.63	120.50	77.61	123.59	14.34	79.76	78.39	9.12	144.12	19.16
95th-Percentile Queue Length [veh/ln]	1.85	8.42	5.59	8.59	1.03	5.74	5.64	0.66	9.70	1.38
95th-Percentile Queue Length [ft/ln]	46.13	210.52	139.69	214.75	25.82	143.57	141.11	16.42	242.56	34.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.12	31.49	31.49	43.64	31.63	31.63	15.95	9.88	9.90	12.58	11.66	8.40
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	A
d_A, Approach Delay [s/veh]	32.88			35.78			10.26			11.25		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	18.76											
Intersection LOS	B											
Intersection V/C	0.392											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.450

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	210	410	270	40	270	40	20	610	160	130	660	50
Base Volume Input [veh/h]	210	410	270	40	270	40	20	610	160	130	660	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	7	-1	4	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	410	270	40	270	40	20	617	159	134	666	50
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	56	108	71	12	84	12	5	162	42	36	177	13
Total Analysis Volume [veh/h]	222	434	286	50	336	50	21	647	167	143	710	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.19	0.05	0.10	0.11	0.03	0.18	0.11	0.15	0.20	0.04
s, saturation flow rate [veh/h]	1239	1900	1525	956	1900	1789	735	3618	1487	969	3618	1443
c, Capacity [veh/h]	451	670	538	90	442	416	302	1593	655	550	2008	801
d1, Uniform Delay [s]	24.43	27.14	25.77	49.67	32.83	32.94	24.28	19.08	17.65	11.63	12.31	10.27
k, delay calibration	0.50	0.13	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.35	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.81	1.30	0.30	1.99	0.26	0.29	0.44	0.77	0.94	0.81	0.49	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.65	0.53	0.56	0.44	0.46	0.07	0.41	0.25	0.26	0.35	0.07
d, Delay for Lane Group [s/veh]	28.23	28.44	26.08	51.67	33.09	33.23	24.72	19.85	18.59	12.44	12.80	10.43
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.29	8.72	5.35	1.28	4.01	3.90	0.39	5.16	2.56	1.56	4.23	0.54
50th-Percentile Queue Length [ft/ln]	107.31	218.11	133.83	32.08	100.21	97.46	9.69	129.11	63.88	39.03	105.68	13.62
95th-Percentile Queue Length [veh/ln]	7.69	13.57	9.15	2.31	7.22	7.02	0.70	8.89	4.60	2.81	7.60	0.98
95th-Percentile Queue Length [ft/ln]	192.26	339.21	228.70	57.75	180.38	175.44	17.44	222.28	114.99	70.25	189.97	24.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.23	28.44	26.08	51.67	33.14	33.23	24.72	19.85	18.59	12.44	12.80	10.43
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	27.68			35.28			19.72			12.61		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	22.23											
Intersection LOS	C											
Intersection V/C	0.450											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 37.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.800

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
	90	810	80	40	520	30	20	190	160	50	140	40
Base Volume Input [veh/h]	90	810	80	40	520	30	20	190	160	50	140	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	-1	4	0	-3	-1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	810	80	40	519	34	20	187	159	50	140	40
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	213	21	12	154	10	5	50	42	14	38	11
Total Analysis Volume [veh/h]	102	854	84	47	615	40	21	199	169	55	153	44
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6	6
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18	18
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No	
Maximum Recall	No	No		No	No			No				No	
Pedestrian Recall	No	No		No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	54	54	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.54	0.54	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.11	0.25	0.25	0.06	0.17	0.18	0.25	0.12	0.53	0.03
s, saturation flow rate [veh/h]	938	1900	1815	753	1900	1844	894	1461	389	1508
c, Capacity [veh/h]	627	1023	977	493	994	965	283	398	152	411
d1, Uniform Delay [s]	7.60	14.23	14.30	8.10	13.75	13.78	30.96	29.91	33.16	27.24
k, delay calibration	0.15	0.50	0.50	0.50	0.50	0.50	0.27	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	1.53	1.64	0.38	0.90	0.94	10.93	0.27	202.94	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

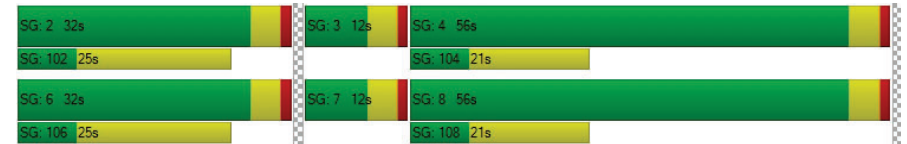
X, volume / capacity	0.16	0.47	0.47	0.10	0.33	0.34	0.78	0.42	1.37	0.11
d, Delay for Lane Group [s/veh]	7.76	15.75	15.94	8.49	14.65	14.72	41.89	30.17	236.11	27.28
Lane Group LOS	A	B	B	A	B	B	D	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.81	6.77	6.61	0.40	4.40	4.33	5.11	3.29	11.37	0.78
50th-Percentile Queue Length [ft/ln]	20.35	169.14	165.27	10.08	110.06	108.32	127.70	82.31	284.22	19.47
95th-Percentile Queue Length [veh/ln]	1.47	11.03	10.83	0.73	7.84	7.75	8.81	5.93	19.52	1.40
95th-Percentile Queue Length [ft/ln]	36.63	275.79	270.69	18.14	196.08	193.66	220.36	148.15	488.01	35.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.76	15.84	15.94	8.49	14.68	14.72	41.89	41.89	30.17	236.11	236.11	27.28
Movement LOS	A	B	B	A	B	B	D	D	C	F	F	C
d_A, Approach Delay [s/veh]	15.05			14.27			36.80			199.65		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	37.89											
Intersection LOS	D											
Intersection V/C	0.800											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.6
Level Of Service: C
Volume to Capacity (v/c): 0.577

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	100	840	150	120	630	40	50	420	170	120	380	110
Base Volume Input [veh/h]	100	840	150	120	630	40	50	420	170	120	380	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	7	0	-1	-1	0	0	13	9	0	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	98	847	150	119	629	40	50	433	179	120	394	110
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	218	39	31	166	11	14	120	50	33	109	30
Total Analysis Volume [veh/h]	101	871	154	126	665	42	56	481	199	132	434	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	55	43	43	55	43	43	25	25	25	36	36	36
g / C, Green / Cycle	0.55	0.43	0.43	0.55	0.43	0.43	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.28	0.28	0.16	0.19	0.19	0.06	0.19	0.20	0.13	0.23	0.08
s, saturation flow rate [veh/h]	931	1900	1768	774	1900	1844	961	1900	1591	1044	1900	1452
c, Capacity [veh/h]	518	820	763	407	824	800	106	470	393	335	688	526
d1, Uniform Delay [s]	11.91	22.33	22.51	14.28	19.73	19.78	48.93	34.88	35.57	24.24	26.35	22.18
k, delay calibration	0.15	0.50	0.50	0.50	0.50	0.50	0.04	0.11	0.15	0.24	0.12	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	3.83	4.34	1.97	1.66	1.74	1.51	2.58	6.06	1.67	1.05	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

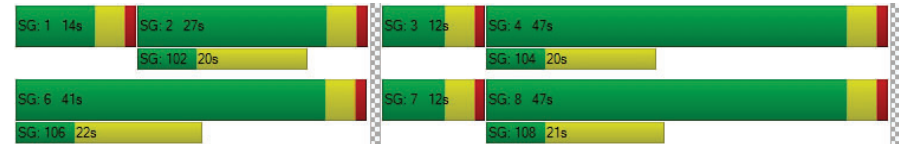
X, volume / capacity	0.19	0.64	0.65	0.31	0.43	0.44	0.53	0.76	0.82	0.39	0.63	0.23
d, Delay for Lane Group [s/veh]	12.16	26.16	26.86	16.25	21.39	21.51	50.44	37.46	41.62	25.91	27.41	22.26
Lane Group LOS	B	C	C	B	C	C	D	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	10.26	9.91	1.54	6.03	5.94	1.44	8.24	7.97	2.26	8.53	1.97
50th-Percentile Queue Length [ft/ln]	26.98	256.60	247.74	38.60	150.87	148.46	35.97	205.96	199.31	56.61	213.35	49.18
95th-Percentile Queue Length [veh/ln]	1.94	15.52	15.07	2.78	10.06	9.93	2.59	12.95	12.60	4.08	13.32	3.54
95th-Percentile Queue Length [ft/ln]	48.56	387.95	376.81	69.48	251.59	248.37	64.74	323.64	315.07	101.90	333.12	88.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.16	26.44	26.86	16.25	21.45	21.51	50.44	38.54	41.62	25.91	27.41	22.26
Movement LOS	B	C	C	B	C	C	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	25.21			20.66			40.28			26.21		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	27.58											
Intersection LOS	C											
Intersection V/C	0.577											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 30.7
Level Of Service: C
Volume to Capacity (v/c): 0.586

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	130	950	180	30	810	40	60	250	150	100	280	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	5	0	0	8	0	0	0	-2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	129	955	180	30	818	40	60	250	148	100	280	80
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	259	49	8	222	11	16	65	38	27	76	22
Total Analysis Volume [veh/h]	140	1036	195	33	890	44	62	259	153	108	302	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	9	51	51	37	37	37	26	26	26	35	35
g / C, Green / Cycle	0.09	0.51	0.51	0.37	0.37	0.37	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.08	0.33	0.35	0.07	0.25	0.25	0.06	0.14	0.11	0.29	0.06
s, saturation flow rate [veh/h]	1810	1900	1701	460	1900	1836	1094	1900	1352	1394	1366
c, Capacity [veh/h]	171	978	876	114	712	688	72	488	347	488	482
d1, Uniform Delay [s]	44.44	17.59	18.19	44.53	26.00	26.15	50.00	31.97	31.14	29.00	22.33
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.68	3.26	4.36	6.34	4.79	5.21	10.27	0.33	0.33	15.96	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.64	0.69	0.29	0.66	0.67	0.86	0.53	0.44	0.84	0.18
d, Delay for Lane Group [s/veh]	48.13	20.85	22.55	50.88	30.79	31.36	60.26	32.30	31.46	44.96	22.40
Lane Group LOS	D	C	C	D	C	C	E	C	C	D	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.55	10.87	10.92	1.00	10.02	9.97	1.74	5.30	3.05	9.95	1.37
50th-Percentile Queue Length [ft/ln]	88.87	271.79	272.92	24.90	250.55	249.31	43.39	132.46	76.35	248.82	34.29
95th-Percentile Queue Length [veh/ln]	6.40	16.28	16.34	1.79	15.21	15.15	3.12	9.07	5.50	15.13	2.47
95th-Percentile Queue Length [ft/ln]	159.96	406.98	408.38	44.82	380.35	378.79	78.11	226.84	137.43	378.17	61.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.13	21.52	22.55	50.88	31.06	31.36	60.26	32.30	31.46	44.96	44.96	22.40
Movement LOS	D	C	C	D	C	C	E	C	C	D	D	C
d_A, Approach Delay [s/veh]	24.38		31.75			35.69			41.05			
Approach LOS	C		C			D			D			
d_I, Intersection Delay [s/veh]	30.65											
Intersection LOS	C											
Intersection V/C	0.586											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 51.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.522

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	130	1240	50	40	1020	20	6	80	110	66	150	50
Base Volume Input [veh/h]	130	1240	50	40	1020	20	6	80	110	66	150	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	4	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	1244	50	40	1026	20	6	80	110	66	150	50
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	328	13	10	267	5	2	24	32	18	42	14
Total Analysis Volume [veh/h]	145	1312	53	42	1069	21	7	95	130	70	169	56
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	91	91	91	91	91	91	91	91
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	9	33	33	5	28	28	40	40
g / C, Green / Cycle	0.10	0.36	0.36	0.05	0.31	0.31	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.36	0.37	0.02	0.29	0.29	0.13	0.12
s, saturation flow rate [veh/h]	1810	1900	1860	1810	1900	1878	1681	1808
c, Capacity [veh/h]	180	680	666	93	588	582	739	794
d1, Uniform Delay [s]	40.14	29.24	29.24	41.94	30.46	30.52	16.53	16.35
k, delay calibration	0.04	0.50	0.50	0.04	0.32	0.32	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.20	36.71	40.17	1.27	16.81	17.70	1.06	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

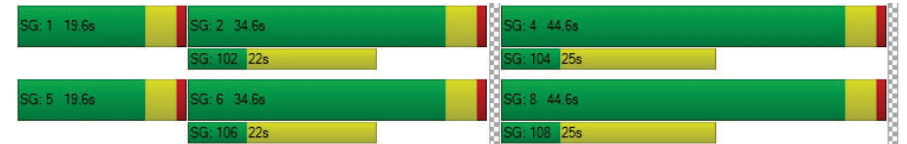
X, volume / capacity	0.81	1.01	1.02	0.45	0.93	0.93	0.30	0.28
d, Delay for Lane Group [s/veh]	43.34	65.95	69.42	43.21	47.28	48.22	17.59	17.24
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.29	21.06	21.26	0.94	13.93	13.99	3.15	3.09
50th-Percentile Queue Length [ft/ln]	82.33	526.46	531.47	23.49	348.25	349.75	78.63	77.32
95th-Percentile Queue Length [veh/ln]	5.93	28.76	29.23	1.69	20.05	20.12	5.66	5.57
95th-Percentile Queue Length [ft/ln]	148.19	719.03	730.82	42.29	501.27	503.10	141.54	139.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.34	67.60	69.42	43.21	47.74	48.22	0.00	17.59	17.59	0.00	17.24	17.24
Movement LOS	D	E	E	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	65.34			47.58			17.59			17.24		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	51.86											
Intersection LOS	D											
Intersection V/C	0.522											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized Delay (sec / veh): 40.0
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.699

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	240	630	0	1190	70	0	0	0	0	650	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	240	640	0	1196	70	0	0	0	0	650	270	780
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	184	0	315	18	0	0	0	0	179	74	215
Total Analysis Volume [veh/h]	276	735	0	1260	74	0	0	0	0	715	297	858
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	72	48	48	38	38	38	38
g / C, Green / Cycle	0.17	0.60	0.40	0.40	0.32	0.32	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.15	0.20	0.25	0.24	0.27	0.26	0.30	0.30
s, saturation flow rate [veh/h]	1810	3618	3618	1840	1810	1855	1458	1572
c, Capacity [veh/h]	301	2187	1445	735	577	591	465	501
d1, Uniform Delay [s]	49.12	11.77	28.66	28.50	37.91	37.62	39.51	39.78
k, delay calibration	0.25	0.50	0.50	0.50	0.26	0.25	0.34	0.35
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	21.06	0.42	1.97	3.67	7.55	6.31	20.80	22.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.34	0.62	0.60	0.84	0.82	0.93	0.94
d, Delay for Lane Group [s/veh]	70.18	12.18	30.63	32.18	45.46	43.94	60.31	62.24
Lane Group LOS	E	B	C	C	D	D	E	E
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.86	4.88	10.50	10.80	13.77	13.55	14.41	16.06
50th-Percentile Queue Length [ft/ln]	246.59	121.94	262.54	270.02	344.1	338.6	360.1	401.4
95th-Percentile Queue Length [veh/ln]	15.01	8.50	15.82	16.19	19.85	19.58	20.63	22.63
95th-Percentile Queue Length [ft/ln]	375.36	212.50	395.41	404.77	496.2	489.5	515.7	565.8

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.18	12.18	0.00	0.00	31.08	32.18	0.00	0.00	0.00	44.93	46.50	61.41
Movement LOS	E	B			C	C				D	D	E
d_A, Approach Delay [s/veh]	28.02		31.15			0.00		52.74				
Approach LOS	C		C			A		D				
d_I, Intersection Delay [s/veh]	39.98											
Intersection LOS	D											
Intersection V/C	0.699											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 29.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.552

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	810	260	540	1240	0	110	170	250	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	-2	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	820	260	538	1248	0	110	170	250	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	227	72	144	335	0	32	49	72	0	0	0
Total Analysis Volume [veh/h]	0	910	288	578	1340	0	126	195	287	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No	No	Yes	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	26	26	26	56	87	24	24	24
g / C, Green / Cycle	0.22	0.22	0.22	0.47	0.73	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.17	0.19	0.20	0.16	0.37	0.09	0.09	0.18
s, saturation flow rate [veh/h]	3618	1556	1454	3514	3618	1830	1729	1577
c, Capacity [veh/h]	797	343	320	1644	2628	360	340	310
d1, Uniform Delay [s]	43.80	45.28	45.46	20.33	7.13	42.53	42.51	47.29
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.20
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	3.06	3.72	0.59	0.71	0.34	0.36	18.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.89	0.90	0.35	0.51	0.46	0.46	0.92
d, Delay for Lane Group [s/veh]	44.37	48.35	49.18	20.92	7.84	42.87	42.86	65.40
Lane Group LOS	D	D	D	C	A	D	D	E
Critical Lane Group	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.40	8.91	8.54	5.27	6.89	4.34	4.08	9.86
50th-Percentile Queue Length [ft/ln]	209.94	222.71	213.59	131.87	172.36	108.42	101.88	246.49
95th-Percentile Queue Length [veh/ln]	13.15	13.80	13.34	9.04	11.20	7.75	7.34	15.01
95th-Percentile Queue Length [ft/ln]	328.75	345.08	333.43	226.04	280.02	193.80	183.38	375.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	44.86	49.18	20.92	7.84	0.00	42.87	42.86	65.40	0.00	0.00	0.00
Movement LOS		D	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]		46.53		11.78		53.50		0.00				
Approach LOS		D		B		D		A				
d_I, Intersection Delay [s/veh]		29.77										
Intersection LOS		C										
Intersection V/C		0.552										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 36.3
Level Of Service: D
Volume to Capacity (v/c): 0.553

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	710	260	90	780	110	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	-2	0	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	739	258	90	782	110	180
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	206	72	28	245	32	52
Total Analysis Volume [veh/h]	825	288	113	981	126	207
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
12, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.23	0.21	0.17	0.27	0.15	0.28
s, saturation flow rate [veh/h]	3618	1353	665	3618	832	734
c, Capacity [veh/h]	2509	938	458	2509	145	128
d1, Uniform Delay [s]	6.09	5.97	10.61	6.45	40.14	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.38
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.85	1.28	0.46	5.92	302.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.31	0.25	0.39	0.87	1.62
d, Delay for Lane Group [s/veh]	6.44	6.82	11.89	6.91	46.06	343.47
Lane Group LOS	A	A	B	A	D	F
Critical Lane Group	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.13	2.28	1.36	3.94	3.18	13.84
50th-Percentile Queue Length [ft/ln]	78.17	56.96	33.92	98.61	79.56	345.90
95th-Percentile Queue Length [veh/ln]	5.63	4.10	2.44	7.10	5.73	23.65
95th-Percentile Queue Length [ft/ln]	140.71	102.52	61.05	177.49	143.21	591.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.44	6.82	11.89	6.91	46.06	343.47
Movement LOS	A	A	B	A	D	F
d_A, Approach Delay [s/veh]	6.53		7.42		230.94	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	36.34					
Intersection LOS	D					
Intersection V/C	0.553					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.3
Level Of Service: C
Volume to Capacity (v/c): 0.384

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd						Olympic Dr Olympic Blvd		
	40	200	130	110	260	10	50	150	60	90	120	20	90	120	20
Base Volume Input [veh/h]	40	200	130	110	260	10	50	150	60	90	120	20	90	120	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	9	18	0	0	1	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	204	130	119	278	10	50	151	60	90	120	20	90	120	20
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	57	37	33	78	3	13	40	16	26	35	6	26	35	6
Total Analysis Volume [veh/h]	45	229	146	134	313	11	52	158	63	105	141	23	105	141	23
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165					
Bicycle Volume [bicycles/h]	4			3			61			31					

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0	0.0
Minimum Recall	No	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	48	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.54	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.22	0.12	0.17	0.05	0.13	0.09	0.10
s, saturation flow rate [veh/h]	1152	1692	1125	1878	1025	1724	1149	1716
c, Capacity [veh/h]	733	885	685	1008	159	316	130	314
d1, Uniform Delay [s]	6.94	13.19	7.76	11.70	40.43	34.51	44.15	33.27
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	1.49	0.64	0.84	0.44	1.06	4.47	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

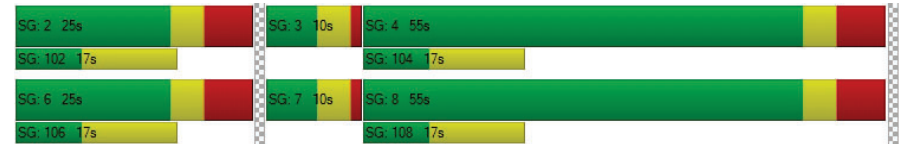
X, volume / capacity	0.06	0.42	0.20	0.32	0.33	0.70	0.81	0.52
d, Delay for Lane Group [s/veh]	6.95	14.68	8.40	12.54	40.87	35.58	48.62	33.77
Lane Group LOS	A	B	A	B	D	D	D	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.29	4.63	1.06	3.64	1.13	4.55	2.46	3.19
50th-Percentile Queue Length [ft/ln]	7.26	115.63	26.42	91.00	28.17	113.67	61.55	79.71
95th-Percentile Queue Length [veh/ln]	0.52	8.15	1.90	6.55	2.03	8.04	4.43	5.74
95th-Percentile Queue Length [ft/ln]	13.07	203.81	47.55	163.81	50.71	201.09	110.79	143.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.95	14.68	14.68	8.40	12.54	12.54	40.87	35.58	35.58	48.62	33.77	33.77
Movement LOS	A	B	B	A	B	B	D	D	D	D	C	C
d_A, Approach Delay [s/veh]	13.85			11.33			36.58			39.57		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	22.28											
Intersection LOS	C											
Intersection V/C	0.384											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 14.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.548

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				No				Yes			

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Base Volume Input [veh/h]	40	0	890	80	180	1400	0	32	1085	209	80	0	90	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	17	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	0	907	80	181	1401	0	32	1085	209	80	0	90	0	0	0	0
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	243	21	50	386	0	8	271	52	25	0	28	0	0	0	0
Total Analysis Volume [veh/h]	40	0	973	86	200	1545	0	32	1085	209	100	0	112	0	0	0	0
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk			No			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	107	107	117	108	23	23
g / C, Green / Cycle	0.03	0.71	0.71	0.78	0.72	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.27	0.05	0.29	0.43	0.08	0.10
s, saturation flow rate [veh/h]	1810	3618	1585	679	3618	1231	1132
c, Capacity [veh/h]	52	2569	1125	538	2615	192	177
d1, Uniform Delay [s]	72.29	8.62	6.66	5.39	10.04	58.07	59.21
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.52	0.43	0.13	1.96	0.99	0.81	1.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.38	0.08	0.37	0.59	0.52	0.63
d, Delay for Lane Group [s/veh]	80.81	9.04	6.79	7.36	11.03	58.88	60.61
Lane Group LOS	F	A	A	A	B	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.66	6.26	0.88	1.68	12.02	3.55	4.08
50th-Percentile Queue Length [ft/ln]	41.50	156.54	21.90	42.04	300.50	88.87	101.98
95th-Percentile Queue Length [veh/ln]	2.99	10.37	1.58	3.03	17.71	6.40	7.34
95th-Percentile Queue Length [ft/ln]	74.70	259.14	39.43	75.67	442.65	159.97	183.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.81	0.00	9.04	6.79	7.36	11.03	0.00	0.00	0.00	0.00	58.88	0.00	60.61
Movement LOS	F		A	A	A	B					E		E
d_A, Approach Delay [s/veh]	11.48			10.61			0.00			59.80			
Approach LOS	B			B			A			E			
d_I, Intersection Delay [s/veh]	14.33												
Intersection LOS	B												
Intersection V/C	0.548												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 90.1
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.206

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	2010	2	360	2530	20	20	30	30	150	20	340	340
Base Volume Input [veh/h]	40	2010	2	360	2530	20	20	30	30	150	20	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	6	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	2010	2	364	2530	20	20	30	30	156	20	344
Peak Hour Factor	0.8617	0.8617	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	583	1	93	647	5	8	12	12	47	6	104
Total Analysis Volume [veh/h]	46	2333	2	372	2588	20	32	48	48	188	24	414
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	329	329	329	329	329	329	329	329
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	10	200	69	259	259	45	45	118
g / C, Green / Cycle	0.03	0.61	0.21	0.79	0.79	0.14	0.14	0.36
(v / s)_i Volume / Saturation Flow Rate	0.03	0.45	0.21	0.47	0.47	0.55	0.42	0.26
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1893	233	511	1615
c, Capacity [veh/h]	56	3144	381	2847	1489	46	91	582
d1, Uniform Delay [s]	158.24	46.09	128.82	14.16	14.21	134.98	146.99	90.36
k, delay calibration	0.04	0.04	0.44	0.04	0.28	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.65	0.13	37.50	0.08	1.03	870.54	636.03	7.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

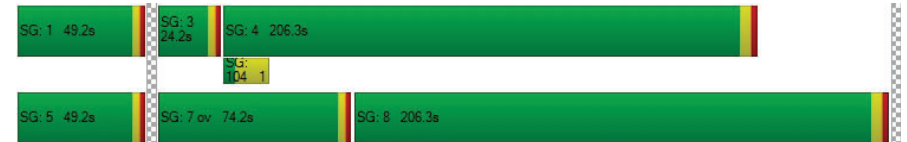
X, volume / capacity	0.82	0.74	0.98	0.60	0.60	2.81	2.34	0.71
d, Delay for Lane Group [s/veh]	168.89	46.22	166.33	14.23	15.24	1005.52	783.02	97.57
Lane Group LOS	F	D	F	B	B	F	F	F
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.17	45.72	36.04	25.79	27.58	15.06	24.03	32.19
50th-Percentile Queue Length [ft/ln]	104.31	1143.02	901.01	644.82	689.60	376.42	600.83	804.63
95th-Percentile Queue Length [veh/ln]	7.51	56.81	45.89	34.12	36.20	26.56	39.92	41.49
95th-Percentile Queue Length [ft/ln]	187.75	1420.25	1147.15	853.05	904.93	663.92	998.02	1037.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	168.89	46.22	0.00	166.33	14.57	15.24	1005.52	1005.52	1005.52	783.02	783.02	97.57
Movement LOS	F	D		F	B	B	F	F	F	F	F	F
d_A, Approach Delay [s/veh]	48.59		33.52			1005.52			329.70			
Approach LOS	D		C			F			F			
d_I, Intersection Delay [s/veh]	90.07											
Intersection LOS	F											
Intersection V/C	1.206											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 152.7
Level Of Service: F
Volume to Capacity (v/c): 1.263

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	310	410	120	40	460	100	70	130	220	0	30	140	70
Base Volume Input [veh/h]	310	410	120	40	460	100	70	130	220	0	30	140	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	7	0	0	8	0	0	0	4	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	320	417	120	40	468	100	70	130	224	0	30	140	70
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	111	32	11	134	29	19	36	61	0	9	44	22
Total Analysis Volume [veh/h]	341	444	128	46	535	114	77	142	245	0	38	176	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	60	60	4	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.60	0.60	0.04	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.19	0.23	0.10	0.03	0.28	0.08	0.79	0.16	0.37	0.10
s, saturation flow rate [veh/h]	1810	1900	1264	1810	1900	1352	276	1518	583	860
c, Capacity [veh/h]	189	1142	760	65	1012	720	100	570	150	159
d1, Uniform Delay [s]	44.75	10.37	8.85	47.68	15.20	11.93	41.40	23.24	38.86	36.98
k, delay calibration	0.38	0.50	0.50	0.04	0.50	0.50	0.50	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	377.79	1.00	0.48	5.28	1.98	0.47	568.90	0.19	225.07	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

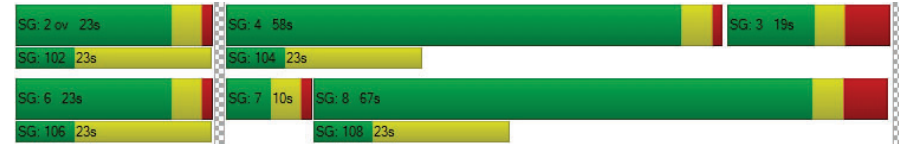
X, volume / capacity	1.80	0.39	0.17	0.71	0.53	0.16	2.19	0.43	1.42	0.55
d, Delay for Lane Group [s/veh]	422.54	11.37	9.33	52.96	17.18	12.40	610.29	23.43	263.93	38.09
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	24.47	5.06	1.27	1.22	8.06	1.35	18.28	4.33	13.10	1.96
50th-Percentile Queue Length [ft/ln]	611.70	126.42	31.66	30.56	201.52	33.72	456.88	108.15	327.45	49.11
95th-Percentile Queue Length [veh/ln]	38.85	8.74	2.28	2.20	12.72	2.43	31.71	7.74	21.93	3.54
95th-Percentile Queue Length [ft/ln]	971.28	218.62	56.99	55.01	317.93	60.69	792.67	193.43	548.29	88.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	422.54	11.37	9.33	52.96	17.18	12.40	610.29	610.29	23.43	263.9	263.9	263.9	38.09
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	164.65		18.77		300.42		198.12						
Approach LOS	F		B		F		F						
d_I, Intersection Delay [s/veh]	152.74												
Intersection LOS	F												
Intersection V/C	1.263												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	27.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.402

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	520	180	210	590	260	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	6	0	12	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	537	186	210	602	260	300
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	50	55	159	75	86
Total Analysis Volume [veh/h]	581	201	222	635	299	345
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.16	0.15	0.23	0.18	0.17	0.13	0.19
s, saturation flow rate [veh/h]	3618	1370	980	3618	1299	1676	1064
c, Capacity [veh/h]	2089	791	717	2509	226	292	186
d1, Uniform Delay [s]	10.63	10.46	5.83	5.69	41.27	39.01	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.16	0.04	0.22
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.77	1.12	0.24	34.85	1.29	75.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

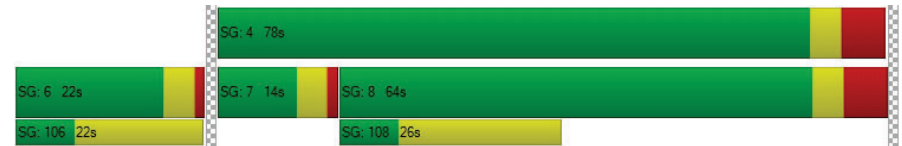
X, volume / capacity	0.28	0.25	0.31	0.25	1.00	0.73	1.10
d, Delay for Lane Group [s/veh]	10.96	11.23	6.95	5.93	76.13	40.30	116.60
Lane Group LOS	B	B	A	A	F	D	F
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.16	2.25	1.65	2.25	7.69	4.97	8.39
50th-Percentile Queue Length [ft/ln]	78.90	56.31	41.14	56.22	192.31	124.25	209.73
95th-Percentile Queue Length [veh/ln]	5.88	4.05	2.96	4.05	12.26	8.63	13.74
95th-Percentile Queue Length [ft/ln]	142.01	101.36	74.05	101.20	306.45	215.66	343.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.96	11.23	6.95	5.93	66.51	87.17
Movement LOS	B	B	A	A	E	F
d_A, Approach Delay [s/veh]	11.03		6.20		77.21	
Approach LOS	B		A		E	
d_I, Intersection Delay [s/veh]	27.88					
Intersection LOS	C					
Intersection V/C	0.402					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 13.1
Level Of Service: B
Volume to Capacity (v/c): 0.354

Intersection Setup

Name	Ocean Ave		Ocean Ave			Arizona Ave		
	Northbound		Southbound			Westbound		
Approach								
Lane Configuration						T		
Turning Movement	Thru	Right	U-turn	Left	Thru	U-turn	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00			35.00		
Grade [%]	0.00		0.00			0.00		
Crosswalk	Yes		Yes			Yes		

Volumes

Name	Ocean Ave		Ocean Ave			Arizona Ave		
	Base Volume Input [veh/h]	570	150	0	130	690	0	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	43	0	16	-4	0	-2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	592	193	0	146	686	0	98	120
Peak Hour Factor	0.9093	0.9093	1.0000	0.9413	0.9413	1.0000	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	163	53	0	39	182	0	29	35
Total Analysis Volume [veh/h]	651	212	0	155	729	0	116	142
Presence of On-Street Parking	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389			253		
Bicycle Volume [bicycles/h]	6		7			22		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	4	4	0	6	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	Lag	-	-	Lag	-
Minimum Green [s]	7	7	0	7	7	0	7	7
Maximum Green [s]	30	30	0	30	30	0	25	25
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	5.0	5.0	0.0	5.0	5.0	0.0	1.0	1.0
Split [s]	69	69	0	69	69	0	31	31
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	7	7	0	0	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	0	0	18	18
Rest in Walk	No				No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	0.0	6.6	6.6	0.0	2.6	2.6
Minimum Recall	Yes				Yes		No	
Maximum Recall	No				No		No	
Pedestrian Recall	No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.18	0.16	0.20	0.20	0.15
s, saturation flow rate [veh/h]	3618	1339	779	3618	1697
c, Capacity [veh/h]	2235	827	470	2235	424
d1, Uniform Delay [s]	8.89	8.66	14.95	9.13	33.13
k, delay calibration	0.50	0.50	0.50	0.50	0.06
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.75	1.88	0.39	0.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

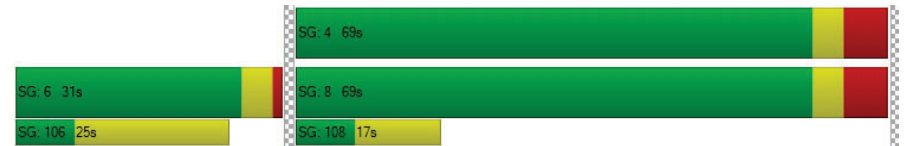
X, volume / capacity	0.29	0.26	0.33	0.33	0.61
d, Delay for Lane Group [s/veh]	9.22	9.41	16.83	9.52	33.95
Lane Group LOS	A	A	B	A	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	3.17	2.12	2.32	3.64	5.49
50th-Percentile Queue Length [ft/ln]	79.13	52.89	57.89	91.08	137.15
95th-Percentile Queue Length [veh/ln]	5.70	3.81	4.17	6.56	9.33
95th-Percentile Queue Length [ft/ln]	142.44	95.20	104.20	163.94	233.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.22	9.41	16.83	16.83	9.52	33.95	33.95	33.95
Movement LOS	A	A	B	B	A	C	C	C
d_A, Approach Delay [s/veh]	9.27		10.80		33.95			
Approach LOS	A		B		C			
d_I, Intersection Delay [s/veh]	13.12							
Intersection LOS	B							
Intersection V/C	0.354							

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	43.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.477

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	550	240	150	640	180	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	-9	-4	0	2	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	585	231	146	640	182	177
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	165	65	42	183	50	49
Total Analysis Volume [veh/h]	660	260	167	731	201	195
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.18	0.20	0.24	0.16
s, saturation flow rate [veh/h]	3618	1296	926	3618	832	1238
c, Capacity [veh/h]	2190	785	710	2618	120	325
d1, Uniform Delay [s]	9.52	9.74	4.68	4.78	42.78	32.26
k, delay calibration	0.50	0.50	0.50	0.50	0.38	0.10
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	1.13	0.78	0.27	329.71	1.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

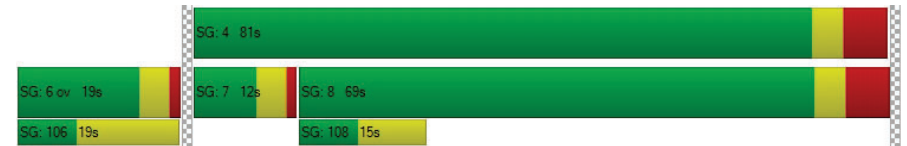
X, volume / capacity	0.30	0.33	0.24	0.28	1.67	0.60
d, Delay for Lane Group [s/veh]	9.88	10.87	5.46	5.05	372.49	33.98
Lane Group LOS	A	B	A	A	F	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.37	2.88	1.03	2.29	13.93	4.22
50th-Percentile Queue Length [ft/ln]	84.36	71.98	25.85	57.22	348.17	105.60
95th-Percentile Queue Length [veh/ln]	6.07	5.18	1.86	4.12	23.72	7.59
95th-Percentile Queue Length [ft/ln]	151.85	129.56	46.53	102.99	593.07	189.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.88	10.87	5.46	5.05	372.49	33.98
Movement LOS	A	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.16		5.12		205.80	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	43.11					
Intersection LOS	D					
Intersection V/C	0.477					

Sequence

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



**Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE**

Control Type:	Signalized	Delay (sec / veh):	36.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.467

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	10	800	142	67	840	20	20	13	70	190	10	170
Base Volume Input [veh/h]	10	800	142	67	840	20	20	13	70	190	10	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	2	0	0	0	0	0	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	818	142	67	842	20	20	13	70	190	10	178
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	229	41	18	221	5	6	6	21	53	3	50
Total Analysis Volume [veh/h]	11	918	165	71	884	21	23	24	82	213	11	200
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	79	79	73	73	11	25	25
g / C, Green / Cycle	0.53	0.53	0.49	0.49	0.08	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.25	0.24	0.24	0.06	0.12	0.15
s, saturation flow rate [veh/h]	693	3618	1900	1881	1654	1814	1335
c, Capacity [veh/h]	334	1914	923	914	124	297	218
d1, Uniform Delay [s]	18.86	22.29	26.02	26.10	68.48	59.84	61.70
k, delay calibration	0.04	0.50	0.50	0.50	0.08	0.07	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.86	1.86	1.92	10.64	2.47	20.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

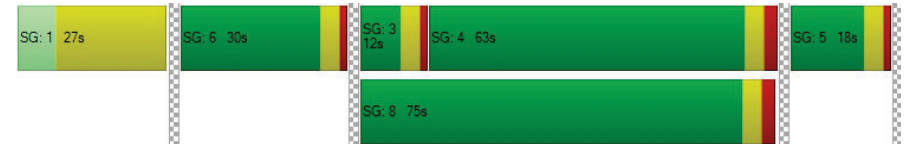
X, volume / capacity	0.03	0.48	0.49	0.50	0.84	0.76	0.92
d, Delay for Lane Group [s/veh]	18.87	23.15	27.88	28.02	79.11	62.32	81.87
Lane Group LOS	B	C	C	C	E	E	F
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.19	10.52	11.48	11.53	4.34	8.43	8.79
50th-Percentile Queue Length [ft/ln]	4.66	263.07	287.07	288.15	108.45	210.72	219.87
95th-Percentile Queue Length [veh/ln]	0.34	15.84	17.04	17.09	7.75	13.19	13.66
95th-Percentile Queue Length [ft/ln]	8.40	396.07	426.00	427.34	193.85	329.76	341.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.87	23.15	0.00	0.00	27.95	28.02	79.11	0.00	79.11	62.32	62.32	81.87
Movement LOS	B	C			C	C	E		E	E	E	F
d_A, Approach Delay [s/veh]	23.10		27.95			79.11		71.54				
Approach LOS	C		C			E		E				
d_I, Intersection Delay [s/veh]	36.14											
Intersection LOS	D											
Intersection V/C	0.467											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 24.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.456

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	400	670	800	170	130	570
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	400	688	802	170	130	570
Peak Hour Factor	0.9529	0.9529	0.9745	0.9745	0.9595	0.9595
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	105	181	206	44	34	149
Total Analysis Volume [veh/h]	420	722	823	174	135	594
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	75	75	75	15	36
g / C, Green / Cycle	0.14	0.62	0.62	0.62	0.12	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.20	0.23	0.13	0.11	0.21
s, saturation flow rate [veh/h]	3514	3618	3618	1331	1240	2859
c, Capacity [veh/h]	485	2258	2258	831	152	855
d1, Uniform Delay [s]	50.59	10.58	10.97	9.75	51.78	37.17
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.86	0.37	0.46	0.57	6.60	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

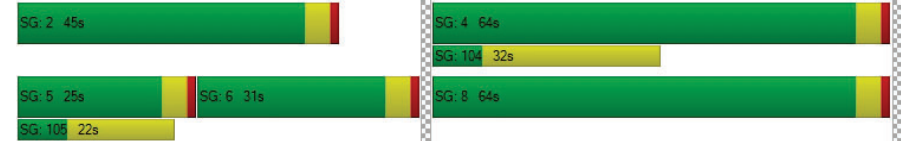
X, volume / capacity	0.87	0.32	0.36	0.21	0.89	0.69
d, Delay for Lane Group [s/veh]	52.45	10.96	11.42	10.32	58.38	37.56
Lane Group LOS	D	B	B	B	E	D
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.29	4.47	5.28	2.06	4.47	8.22
50th-Percentile Queue Length [ft/ln]	157.18	111.67	132.01	51.56	111.84	205.53
95th-Percentile Queue Length [veh/ln]	10.40	7.93	9.05	3.71	7.94	12.92
95th-Percentile Queue Length [ft/ln]	259.99	198.33	226.23	92.81	198.56	323.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.45	10.96	11.42	10.32	58.38	37.56
Movement LOS	D	B	B	B	E	D
d_A, Approach Delay [s/veh]	26.22		11.23		41.41	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	24.87					
Intersection LOS	C					
Intersection V/C	0.456					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.9
Level Of Service: C
Volume to Capacity (v/c): 0.494

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd			Pico Blvd					
Base Volume Input [veh/h]	0	0	0	0	70	160	70	3	270	98	290	280	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	11	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	0	0	0	70	160	70	3	270	98	290	291	
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319	
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	0	0	0	0	23	53	23	1	71	26	78	78	
Total Analysis Volume [veh/h]	0	0	0	0	93	212	93	3	285	103	311	312	
Presence of On-Street Parking					No				No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	6				70				188				
Bicycle Volume [bicycles/h]	33				8				56				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk	No											
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall	Yes											
Maximum Recall	No											
Pedestrian Recall	No											
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	53	53	53	65	65	65
g / C, Green / Cycle	0.44	0.44	0.44	0.54	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.09	0.08	0.10	0.24	0.16	0.21
s, saturation flow rate [veh/h]	1058	1900	1502	1202	1900	1464
c, Capacity [veh/h]	409	834	659	669	1024	789
d1, Uniform Delay [s]	29.55	20.61	20.95	15.63	15.26	16.22
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.29	0.50	0.78	1.98	0.77	1.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.19	0.22	0.43	0.30	0.40
d, Delay for Lane Group [s/veh]	30.84	21.11	21.73	17.61	16.03	17.70
Lane Group LOS	C	C	C	B	B	B
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.11	2.80	2.69	4.52	4.78	5.19
50th-Percentile Queue Length [ft/ln]	52.68	70.03	67.19	112.90	119.44	129.67
95th-Percentile Queue Length [veh/ln]	3.79	5.04	4.84	8.00	8.36	8.92
95th-Percentile Queue Length [ft/ln]	94.83	126.05	120.95	200.02	209.05	223.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	30.84	21.27	21.73	0.00	17.61	0.00	16.03	17.70
Movement LOS					C	C	C		B		B	B
d_A, Approach Delay [s/veh]	0.00				23.62				17.10			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	29.94											
Intersection LOS	C											
Intersection V/C	0.494											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	610	230	160	770	65	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	0	-5	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	617	230	155	776	65	130
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	164	61	43	215	17	34
Total Analysis Volume [veh/h]	1	53	655	244	172	861	69	135
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	46	46	46
g / C, Green / Cycle	0.26	0.26	0.26	0.38	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.20	0.16	0.27	0.28
s, saturation flow rate [veh/h]	574	3618	1246	1065	1900	1731
c, Capacity [veh/h]	64	955	329	370	731	666
d1, Uniform Delay [s]	59.96	39.67	40.39	27.17	31.04	31.60
k, delay calibration	0.04	0.04	0.04	0.04	0.09	0.17
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.01	0.33	1.24	0.34	0.97	2.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

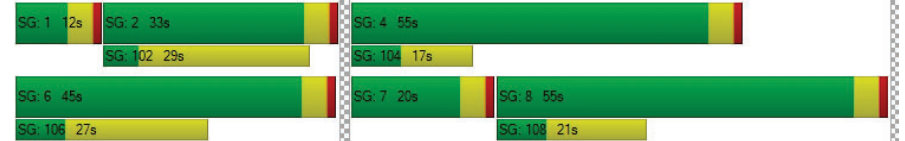
X, volume / capacity	0.83	0.69	0.74	0.46	0.70	0.73
d, Delay for Lane Group [s/veh]	69.97	40.00	41.63	27.51	32.01	33.99
Lane Group LOS	E	D	D	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.79	8.70	6.68	3.39	12.47	12.37
50th-Percentile Queue Length [ft/ln]	44.76	217.40	166.94	84.63	311.67	309.32
95th-Percentile Queue Length [veh/ln]	3.22	13.53	10.92	6.09	18.26	18.14
95th-Percentile Queue Length [ft/ln]	80.57	338.30	272.89	152.34	456.43	453.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	69.97	40.00	41.63	27.51	32.82	0.00	33.99
Movement LOS		E	D	D	C	C		C
d_A, Approach Delay [s/veh]		42.08			32.17			
Approach LOS		D			C			
d_I, Intersection Delay [s/veh]		29.94						
Intersection LOS		C						
Intersection V/C		0.494						

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 130.9
 Level Of Service: F
 Volume to Capacity (v/c): 0.768

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	80	110	220	0	50	70	70	0	40	250	60	0	170	430	70
Base Volume Input [veh/h]	0	80	110	220	0	50	70	70	0	40	250	60	0	170	430	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	-1	0	0	0	0	0	0	6	0	0	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	80	110	219	0	50	70	70	0	40	256	60	0	175	430	70
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	1.000	0.868	0.868	0.868	1.000	0.968	0.968	0.968
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	21	29	58	0	14	19	19	0	12	74	17	0	45	111	18
Total Analysis Volume [veh/h]	0	85	117	233	0	54	76	76	0	46	295	69	0	181	444	72
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	0	2	2	2	0	6	6	6
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	0	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	0	14	14	14	0	14	14	14
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	0.0	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No			Yes				Yes		
Maximum Recall			No				No			No				No		
Pedestrian Recall			No				No			No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.07	0.21	0.60	0.05	0.08	0.04	0.16	0.14	0.14
s, saturation flow rate [veh/h]	1255	1665	341	899	3618	1577	1101	1900	1790
c, Capacity [veh/h]	73	258	95	396	1709	745	513	898	846
d1, Uniform Delay [s]	50.02	42.26	43.24	21.55	15.15	14.55	21.48	16.16	16.20
k, delay calibration	0.04	0.16	0.50	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	85.53	167.77	559.39	0.60	0.22	0.25	1.90	0.83	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

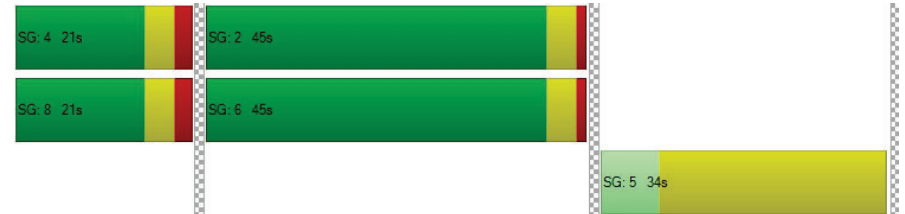
X, volume / capacity	1.16	1.36	2.17	0.12	0.17	0.09	0.35	0.29	0.30
d, Delay for Lane Group [s/veh]	135.54	210.03	602.63	22.15	15.37	14.80	23.38	16.99	17.10
Lane Group LOS	F	F	F	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.54	18.26	17.10	0.79	1.94	0.90	3.25	3.81	3.66
50th-Percentile Queue Length [ft/ln]	88.47	456.59	427.41	19.65	48.48	22.47	81.16	95.19	91.51
95th-Percentile Queue Length [veh/ln]	6.37	28.66	29.39	1.41	3.49	1.62	5.84	6.85	6.59
95th-Percentile Queue Length [ft/ln]	159.25	716.54	734.76	35.37	87.26	40.45	146.09	171.35	164.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	135.5	135.5	210.0	210.0	602.6	602.6	602.6	602.6	22.15	22.15	15.37	14.80	23.38	23.38	17.04	17.10
Movement LOS	F	F	F	F	F	F	F	F	C	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	195.48				602.63				16.04				18.69			
Approach LOS	F				F				B				B			
d_I, Intersection Delay [s/veh]	130.88															
Intersection LOS	F															
Intersection V/C	0.768															

Sequence

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



Intersection Level Of Service Report

Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 29.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.401

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Base Volume Input [veh/h]	90	230	130	40	110	30	50	90	60	70	70	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	-3	0	-2	6	0	0	0	-2	37	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	230	127	40	108	36	50	90	60	68	107	90
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	61	34	12	32	11	15	28	18	19	30	26
Total Analysis Volume [veh/h]	122	243	134	47	128	43	62	111	74	77	121	102
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	16	16	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	23	47	47
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.10	0.13	0.09	0.04	0.10	0.17	0.27
s, saturation flow rate [veh/h]	1233	1900	1544	1155	1793	1464	1100
c, Capacity [veh/h]	223	439	356	176	414	729	559
d1, Uniform Delay [s]	42.76	33.91	32.38	43.16	32.69	16.62	19.53
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	0.41	0.24	0.30	0.25	1.26	3.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

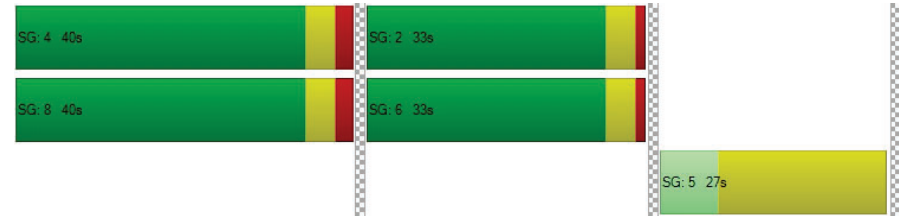
X, volume / capacity	0.55	0.55	0.38	0.27	0.41	0.34	0.54
d, Delay for Lane Group [s/veh]	43.54	34.32	32.63	43.46	32.94	17.88	23.20
Lane Group LOS	D	C	C	D	C	B	C
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.93	5.14	2.70	1.10	3.48	3.64	5.48
50th-Percentile Queue Length [ft/ln]	73.26	128.48	67.61	27.53	87.02	90.97	137.03
95th-Percentile Queue Length [veh/ln]	5.27	8.86	4.87	1.98	6.27	6.55	9.32
95th-Percentile Queue Length [ft/ln]	131.87	221.43	121.70	49.56	156.64	163.74	233.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.54	34.32	32.63	43.46	32.94	32.94	17.88	17.88	17.88	23.20	23.20	23.20
Movement LOS	D	C	C	D	C	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	36.12			35.21			17.88			23.20		
Approach LOS	D			D			B			C		
d_I, Intersection Delay [s/veh]	29.33											
Intersection LOS	C											
Intersection V/C	0.401											

Sequence

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



Intersection Level Of Service Report

Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 83.1
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.953

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	70	260	190	60	150	50	40	230	100	80	170	190
Base Volume Input [veh/h]	70	260	190	60	150	50	40	230	100	80	170	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-5	11	-2	53	41	39	0	-21	-9	0	-6	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	271	188	113	191	89	40	209	91	80	164	202
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	76	53	31	53	25	11	57	25	23	47	58
Total Analysis Volume [veh/h]	73	305	212	126	212	99	43	226	99	92	189	232
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.07	0.16	0.27	0.12	0.18	0.48	0.06	0.69	0.15
s, saturation flow rate [veh/h]	1085	1900	800	1091	1766	564	1570	408	1581
c, Capacity [veh/h]	77	370	156	97	344	325	789	253	795
d1, Uniform Delay [s]	49.95	38.62	40.25	49.68	39.35	21.55	13.19	33.07	14.48
k, delay calibration	0.04	0.10	0.43	0.04	0.15	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.23	4.19	194.43	142.31	11.54	20.82	0.33	89.49	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

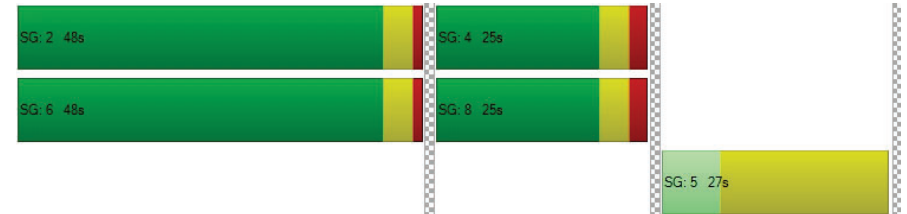
X, volume / capacity	0.94	0.83	1.36	1.30	0.91	0.83	0.13	1.11	0.29
d, Delay for Lane Group [s/veh]	68.18	42.81	234.68	191.99	50.89	42.37	13.52	122.56	15.41
Lane Group LOS	E	D	F	F	D	D	B	F	B
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.19	7.43	12.13	6.21	8.37	5.30	1.22	12.59	3.17
50th-Percentile Queue Length [ft/ln]	54.79	185.74	303.22	155.23	209.32	132.49	30.60	314.65	79.28
95th-Percentile Queue Length [veh/ln]	3.95	11.90	20.30	11.18	13.12	9.08	2.20	19.75	5.71
95th-Percentile Queue Length [ft/ln]	98.63	297.50	507.47	279.41	327.96	226.88	55.09	493.74	142.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.18	42.81	234.68	191.99	50.89	50.89	42.37	42.37	13.52	122.56	122.56	15.41
Movement LOS	E	D	F	F	D	D	D	B	F	F	F	B
d_A, Approach Delay [s/veh]	114.89			91.57			34.61			74.10		
Approach LOS	F			F			C			E		
d_I, Intersection Delay [s/veh]	83.10											
Intersection LOS	F											
Intersection V/C	0.953											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.3
Level Of Service: C
Volume to Capacity (v/c): 0.350

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	Base Volume Input [veh/h]	80	200	200	90	200	40	70	210	110	120	200
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	3	29	0	0	0	0	0	0	-1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	206	200	93	229	40	70	210	110	120	200	199
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	61	59	25	61	11	18	55	29	35	58	57
Total Analysis Volume [veh/h]	95	244	237	99	245	43	73	220	115	139	231	230
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.09	0.13	0.16	0.09	0.16	0.06	0.19	0.13	0.12	0.15
s, saturation flow rate [veh/h]	1108	1900	1473	1154	1840	1168	1769	1062	1900	1559
c, Capacity [veh/h]	167	464	360	204	450	458	766	365	823	675
d1, Uniform Delay [s]	45.69	32.75	34.02	42.87	33.84	23.90	19.83	30.14	18.30	18.86
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.13	0.34	0.77	0.66	0.57	0.74	1.81	3.00	0.85	1.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

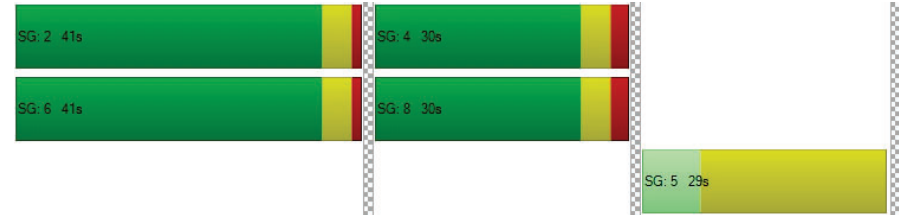
X, volume / capacity	0.57	0.53	0.66	0.48	0.64	0.16	0.44	0.38	0.28	0.34
d, Delay for Lane Group [s/veh]	46.82	33.09	34.78	43.54	34.41	24.65	21.64	33.14	19.15	20.23
Lane Group LOS	D	C	C	D	C	C	C	C	B	C
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.37	5.05	5.13	2.36	6.18	1.30	5.60	3.02	3.51	3.66
50th-Percentile Queue Length [ft/ln]	59.20	126.26	128.20	59.12	154.42	32.48	140.09	75.49	87.87	91.59
95th-Percentile Queue Length [veh/ln]	4.26	8.74	8.84	4.26	10.25	2.34	9.49	5.44	6.33	6.59
95th-Percentile Queue Length [ft/ln]	106.56	218.40	221.04	106.41	256.32	58.47	237.14	135.89	158.16	164.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.82	33.09	34.78	43.54	34.41	34.41	24.65	21.64	21.64	33.14	19.15	20.23
Movement LOS	D	C	C	D	C	C	C	C	C	C	B	C
d_A, Approach Delay [s/veh]	36.05			36.74			22.18			22.80		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.28											
Intersection LOS	C											
Intersection V/C	0.350											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	35.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.388

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T			T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	50	350	0	29	340	130	66	90	0	120	230
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	29	0	0	0	0	0	8	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	354	0	29	369	130	66	90	0	120	238	181
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	95	0	8	99	35	20	27	0	32	63	48
Total Analysis Volume [veh/h]	54	380	0	31	397	140	79	108	0	128	253	192
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	34	34	34	34	57	57
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.21	0.10	0.17	0.18
s, saturation flow rate [veh/h]	983	1863	1863	1407	1862	1489
c, Capacity [veh/h]	129	528	528	399	880	703
d1, Uniform Delay [s]	54.91	38.65	39.10	34.16	20.05	20.23
k, delay calibration	0.04	0.17	0.40	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.81	2.94	7.74	0.20	1.12	1.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.72	0.75	0.35	0.35	0.37
d, Delay for Lane Group [s/veh]	55.72	41.58	46.83	34.36	21.17	21.73
Lane Group LOS	E	D	D	C	C	C
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.63	10.44	11.60	3.25	5.87	5.01
50th-Percentile Queue Length [ft/ln]	40.86	261.01	290.00	81.15	146.86	125.34
95th-Percentile Queue Length [veh/ln]	2.94	15.74	17.19	5.84	9.85	8.69
95th-Percentile Queue Length [ft/ln]	73.55	393.48	429.64	146.07	246.23	217.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.72	41.58	0.00	0.00	46.83	34.36	0.00	0.00	0.00	21.17	21.32	21.73
Movement LOS	E	D			D	C				C	C	C
d_A, Approach Delay [s/veh]	43.34		43.58		0.00		21.42					
Approach LOS	D		D		A		C					
d_I, Intersection Delay [s/veh]	35.29											
Intersection LOS	D											
Intersection V/C	0.388											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 29.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.536

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	50	300	180	170	150	40	130	510	30	200	590	120
Base Volume Input [veh/h]	50	300	180	170	150	40	130	510	30	200	590	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	15	4	0	0	-5	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	304	180	185	154	40	130	505	30	200	591	120
Peak Hour Factor	0.9113	0.9113	0.9113	0.9394	0.9394	0.9394	0.9213	0.9213	0.9213	0.8418	0.8418	0.8418
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	83	49	49	41	11	35	137	8	59	176	36
Total Analysis Volume [veh/h]	55	334	198	197	164	43	141	548	33	238	702	143
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	34	34	34	46	46	46	34	19	19	34	23	23
g / C, Green / Cycle	0.38	0.38	0.38	0.52	0.52	0.52	0.38	0.22	0.22	0.38	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.04	0.18	0.13	0.16	0.09	0.03	0.16	0.15	0.16	0.20	0.23	0.24
s, saturation flow rate [veh/h]	1225	1900	1539	1223	1900	1568	894	1900	1814	1210	1900	1714
c, Capacity [veh/h]	465	726	588	610	979	807	387	410	392	459	491	443
d1, Uniform Delay [s]	22.17	20.87	19.74	12.85	11.60	10.89	21.24	32.74	32.91	21.12	32.11	32.55
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.16	0.19
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	2.09	1.54	1.40	0.37	0.13	0.21	0.87	1.01	4.15	7.94	13.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

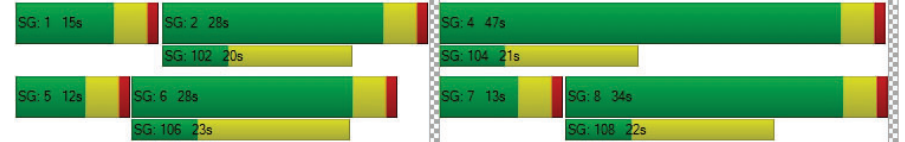
X, volume / capacity	0.12	0.46	0.34	0.32	0.17	0.05	0.36	0.71	0.73	0.52	0.89	0.93
d, Delay for Lane Group [s/veh]	22.69	22.96	21.28	14.25	11.97	11.02	21.46	33.62	33.92	25.27	40.06	46.06
Lane Group LOS	C	C	C	B	B	B	C	C	C	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.88	5.42	3.06	2.23	1.72	0.43	1.91	5.82	5.76	3.91	9.79	9.98
50th-Percentile Queue Length [ft/ln]	21.88	135.59	76.42	55.76	42.97	10.67	47.72	145.56	143.88	97.72	244.72	249.54
95th-Percentile Queue Length [veh/ln]	1.58	9.24	5.50	4.01	3.09	0.77	3.44	9.78	9.69	7.04	14.92	15.16
95th-Percentile Queue Length [ft/ln]	39.38	231.07	137.55	100.36	77.34	19.20	85.90	244.49	242.24	175.90	373.00	379.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.69	22.96	21.28	14.25	11.97	11.02	21.46	33.76	33.92	25.27	42.34	46.06
Movement LOS	C	C	C	B	B	B	C	C	C	C	D	D
d_A, Approach Delay [s/veh]	22.37			12.98			31.36			39.08		
Approach LOS	C			B			C			D		
d_I, Intersection Delay [s/veh]	29.81											
Intersection LOS	C											
Intersection V/C	0.536											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	28.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	90	130	110	110	140	40	30	470	110	150	640	120
Base Volume Input [veh/h]	90	130	110	110	140	40	30	470	110	150	640	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	6	-1	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	130	110	110	140	40	30	476	109	150	644	120
Peak Hour Factor	0.7729	0.7729	0.7729	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	42	36	30	38	11	8	127	29	41	178	33
Total Analysis Volume [veh/h]	116	168	142	118	151	43	32	506	116	165	710	132
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	32	32	32	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.32	0.32	0.32	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.09	0.09	0.09	0.10	0.08	0.03	0.05	0.14	0.07	0.15	0.23	0.23
s, saturation flow rate [veh/h]	1256	1900	1577	1237	1900	1581	664	3618	1579	1115	1900	1781
c, Capacity [veh/h]	203	369	306	190	369	307	161	1164	508	501	844	791
d1, Uniform Delay [s]	44.23	35.68	35.74	45.24	35.33	33.44	39.46	26.77	24.85	17.80	20.02	20.08
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.94	0.33	0.41	1.23	0.27	0.08	2.76	1.18	1.04	0.14	2.22	2.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

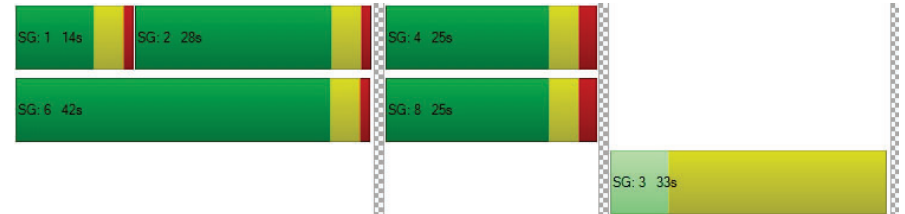
X, volume / capacity	0.57	0.46	0.46	0.62	0.41	0.14	0.20	0.43	0.23	0.33	0.51	0.52
d, Delay for Lane Group [s/veh]	45.17	36.01	36.15	46.47	35.61	33.51	42.22	27.95	25.90	17.94	22.24	22.49
Lane Group LOS	D	D	D	D	D	C	D	C	C	B	C	C
Critical Lane Group	No	No	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.84	3.59	3.05	2.94	3.19	0.86	0.84	4.88	2.15	2.30	7.56	7.21
50th-Percentile Queue Length [ft/ln]	70.92	89.73	76.13	73.44	79.81	21.48	20.89	122.11	53.63	57.53	189.01	180.27
95th-Percentile Queue Length [veh/ln]	5.11	6.46	5.48	5.29	5.75	1.55	1.50	8.51	3.86	4.14	12.07	11.61
95th-Percentile Queue Length [ft/ln]	127.66	161.51	137.04	132.19	143.67	38.67	37.59	212.72	96.53	103.56	301.75	290.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.17	36.01	36.15	46.47	35.61	33.51	42.22	27.95	25.90	17.94	22.34	22.49
Movement LOS	D	D	D	D	D	C	D	C	C	B	C	C
d_A, Approach Delay [s/veh]	38.55			39.43			28.29			21.64		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	28.77											
Intersection LOS	C											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 41.3
Level Of Service: C
Volume to Capacity (v/c): 0.390

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	30	160	60	50	280	60	30	140	90	80	150	70
Base Volume Input [veh/h]	30	160	60	50	280	60	30	140	90	80	150	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	-3	2	0	-1	-2	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	160	60	50	277	62	30	139	88	80	174	70
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	45	17	16	89	20	9	39	25	22	48	19
Total Analysis Volume [veh/h]	43	181	68	64	355	80	34	158	100	89	193	78
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	39	39	39	39	28
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.28
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.04	0.05	0.12	0.12	0.19
s, saturation flow rate [veh/h]	969	1900	1554	1222	1900	1756	1568
c, Capacity [veh/h]	351	749	612	448	749	692	484
d1, Uniform Delay [s]	26.50	20.30	19.20	25.29	20.80	20.88	30.86
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.71	0.77	0.37	0.67	1.02	1.15	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

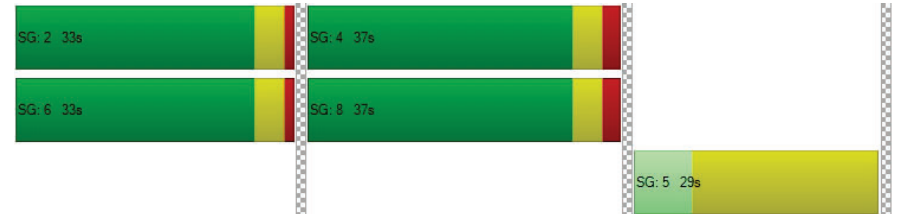
X, volume / capacity	0.12	0.24	0.11	0.14	0.30	0.31	0.60
d, Delay for Lane Group [s/veh]	27.21	21.06	19.57	25.95	21.82	22.03	32.05
Lane Group LOS	C	C	B	C	C	C	D
Critical Lane Group	No	No	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.82	2.90	1.04	1.17	3.68	3.53	6.15
50th-Percentile Queue Length [ft/ln]	20.48	72.61	25.96	29.29	91.91	88.27	153.64
95th-Percentile Queue Length [veh/ln]	1.47	5.23	1.87	2.11	6.62	6.36	10.21
95th-Percentile Queue Length [ft/ln]	36.86	130.69	46.72	52.73	165.43	158.88	255.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.21	21.06	19.57	25.95	21.90	22.03	32.05	32.05	32.05	50.69	50.69	50.69
Movement LOS	C	C	B	C	C	C	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.62			22.44			32.05			50.69		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.27											
Intersection LOS	C											
Intersection V/C	0.390											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 29.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.324

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	30	200	80	70	360	60	0	310	180	0	360	70
Base Volume Input [veh/h]	30	200	80	70	360	60	0	310	180	0	360	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	6	0	0	-3	-2	0	29	1	0	6	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	206	80	70	357	58	0	339	181	0	366	72
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	62	24	19	96	16	0	92	49	0	104	21
Total Analysis Volume [veh/h]	40	249	97	76	385	63	0	367	196	0	417	82
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	49	49	49	49	49	49	21	21	21	21
g / C, Green / Cycle	0.49	0.49	0.49	0.49	0.49	0.49	0.21	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.06	0.07	0.12	0.12	0.19	0.13	0.13	0.14
s, saturation flow rate [veh/h]	957	1900	1582	1149	1900	1795	1900	1565	1900	1781
c, Capacity [veh/h]	440	920	767	507	920	870	403	332	403	378
d1, Uniform Delay [s]	19.74	15.29	14.15	20.66	15.10	15.13	38.43	35.45	35.70	36.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.12	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	0.72	0.34	0.62	0.64	0.70	9.18	0.62	0.58	0.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

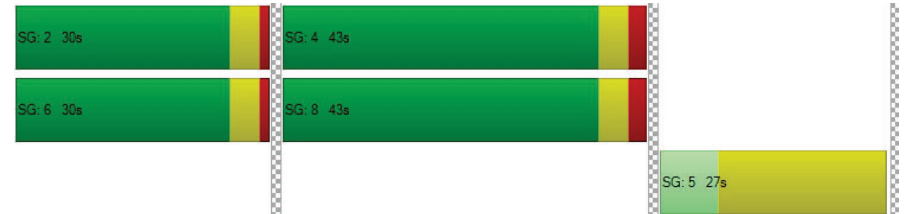
X, volume / capacity	0.09	0.27	0.13	0.15	0.25	0.25	0.91	0.59	0.62	0.66
d, Delay for Lane Group [s/veh]	20.15	16.01	14.49	21.28	15.74	15.83	47.61	36.07	36.28	36.80
Lane Group LOS	C	B	B	C	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.63	3.39	1.23	1.24	3.07	2.97	9.67	4.31	5.52	5.59
50th-Percentile Queue Length [ft/ln]	15.81	84.76	30.71	30.93	76.71	74.20	241.70	107.83	138.01	139.72
95th-Percentile Queue Length [veh/ln]	1.14	6.10	2.21	2.23	5.52	5.34	14.77	7.72	9.37	9.47
95th-Percentile Queue Length [ft/ln]	28.46	152.57	55.27	55.68	138.08	133.55	369.19	192.98	234.34	236.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.15	16.01	14.49	21.28	15.78	15.83	0.00	47.61	36.07	0.00	36.49	36.80
Movement LOS	C	B	B	C	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	16.06			16.58			43.59			36.54		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	29.24											
Intersection LOS	C											
Intersection V/C	0.324											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 40.9
Level Of Service: D
Volume to Capacity (v/c): 0.475

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	160	290	130	80	340	70	0	220	210	110	380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	9	0	0	-2	0	0	-3	6	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	299	130	80	338	70	0	217	216	110	380	90
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	86	38	26	109	23	0	60	60	31	109	26
Total Analysis Volume [veh/h]	184	346	150	103	435	90	0	242	240	126	435	103
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	17	47	47	58	37	37	17	39	29	29	29
g / C, Green / Cycle	0.14	0.39	0.39	0.49	0.31	0.31	0.15	0.32	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.10	0.09	0.14	0.14	0.13	0.15	0.09	0.23	0.07
s, saturation flow rate [veh/h]	1810	1900	1567	1173	1900	1770	1900	1562	1378	1900	1565
c, Capacity [veh/h]	252	743	612	513	586	546	277	505	286	467	385
d1, Uniform Delay [s]	49.53	27.24	24.64	18.13	33.46	33.56	50.22	32.51	37.73	44.29	36.56
k, delay calibration	0.12	0.50	0.50	0.50	0.50	0.50	0.04	0.10	0.15	0.21	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.49	2.10	0.95	0.88	2.59	2.87	3.44	0.65	1.51	14.99	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.47	0.24	0.20	0.46	0.47	0.87	0.48	0.44	0.93	0.27
d, Delay for Lane Group [s/veh]	54.03	29.34	25.59	19.01	36.04	36.43	53.67	33.16	39.25	59.28	36.70
Lane Group LOS	D	C	C	B	D	D	D	C	D	E	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.55	7.70	3.01	1.66	6.89	6.40	7.37	5.67	3.11	14.38	2.45
50th-Percentile Queue Length [ft/ln]	138.81	192.60	75.32	41.42	167.20	159.92	184.16	141.75	77.65	359.53	61.13
95th-Percentile Queue Length [veh/ln]	9.42	12.26	5.42	2.98	10.93	10.54	11.82	9.57	5.59	20.60	4.40
95th-Percentile Queue Length [ft/ln]	235.43	306.40	135.58	74.56	273.23	263.62	295.44	239.37	139.77	515.02	110.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.03	29.34	25.59	19.01	36.19	36.43	0.00	53.67	33.16	39.25	59.28	36.70
Movement LOS	D	C	C	B	D	D		D	C	D	E	D
d_A, Approach Delay [s/veh]	35.19			33.41			43.46			51.97		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	40.90											
Intersection LOS	D											
Intersection V/C	0.475											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	23.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	190	530	0	0	620	150	181	0	84	170	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	8	0	0	5	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	538	0	0	625	150	181	0	84	170	180	30
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	161	0	0	172	41	52	0	24	47	49	8
Total Analysis Volume [veh/h]	239	643	0	0	690	166	208	0	96	187	198	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	60	60	16	16
g / C, Green / Cycle	0.62	0.62	0.50	0.50	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.28	0.18	0.23	0.25	0.12	0.12
s, saturation flow rate [veh/h]	840	3618	1900	1745	1822	1673
c, Capacity [veh/h]	501	2240	957	879	250	230
d1, Uniform Delay [s]	12.64	10.59	19.09	19.60	50.72	50.72
k, delay calibration	0.31	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.03	0.32	1.51	1.93	3.64	3.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.29	0.45	0.49	0.87	0.87
d, Delay for Lane Group [s/veh]	14.66	10.91	20.60	21.53	54.36	54.66
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.98	3.94	7.82	8.08	6.71	6.18
50th-Percentile Queue Length [ft/ln]	74.56	98.38	195.42	202.05	167.83	154.60
95th-Percentile Queue Length [veh/ln]	5.37	7.08	12.40	12.74	10.96	10.26
95th-Percentile Queue Length [ft/ln]	134.22	177.09	310.05	318.61	274.06	256.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.66	10.91	0.00	0.00	20.95	21.53	0.00	0.00	0.00	54.36	54.61	54.66
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	11.93		21.07		0.00		54.50					
Approach LOS	B		C		A		D					
d_I, Intersection Delay [s/veh]	23.81											
Intersection LOS	C											
Intersection V/C	0.428											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 26.2
Level Of Service: C
Volume to Capacity (v/c): 0.481

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		650	340
	Northbound		Southbound			
Base Volume Input [veh/h]	360	0	0	740	650	340
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	5	0	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	0	0	745	650	358
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	0	0	211	178	98
Total Analysis Volume [veh/h]	411	0	0	843	714	393
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	78	78	32	32
g / C, Green / Cycle	0.65	0.65	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.11	0.23	0.20	0.25
s, saturation flow rate [veh/h]	3618	3618	3514	1585
c, Capacity [veh/h]	2368	2368	944	426
d1, Uniform Delay [s]	8.06	9.32	40.23	42.62
k, delay calibration	0.50	0.50	0.04	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.16	0.42	0.47	11.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

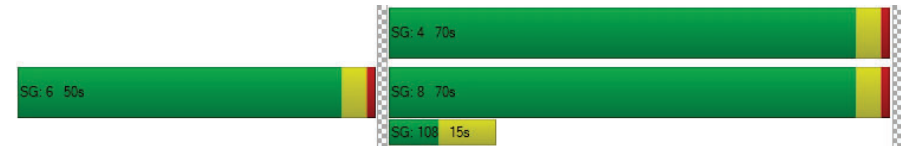
X, volume / capacity	0.17	0.36	0.76	0.92
d, Delay for Lane Group [s/veh]	8.22	9.74	40.70	54.06
Lane Group LOS	A	A	D	D
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.05	4.88	9.17	11.97
50th-Percentile Queue Length [ft/ln]	51.35	122.06	229.22	299.35
95th-Percentile Queue Length [veh/ln]	3.70	8.51	14.13	17.65
95th-Percentile Queue Length [ft/ln]	92.43	212.65	353.37	441.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.22	0.00	0.00	9.74	40.70	54.06
Movement LOS	A			A	D	D
d_A, Approach Delay [s/veh]	8.22		9.74		45.44	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				26.21		
Intersection LOS				C		
Intersection V/C				0.481		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 43.5
Level Of Service: D
Volume to Capacity (v/c): 0.542

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	TTL			TTL			TTL					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	40	310	390	475	620	230	100	590	40	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	5	0	0	0	11	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	310	390	475	620	230	100	601	40	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	79	100	133	173	64	30	180	12	0	0	0
Total Analysis Volume [veh/h]	41	317	399	531	693	257	119	718	48	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No				
Maximum Recall	No	No		No	No			No				
Pedestrian Recall	No	No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	25	25	59	80	80	22	22	22
g / C, Green / Cycle	0.03	0.21	0.21	0.49	0.67	0.67	0.19	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.22	0.15	0.26	0.28	0.17	0.17	0.17
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1621	1865	1729	1671
c, Capacity [veh/h]	57	396	376	1725	1269	1083	345	320	309
d1, Uniform Delay [s]	57.47	45.01	47.38	18.28	8.90	9.20	47.78	47.75	47.84
k, delay calibration	0.04	0.25	0.46	0.04	0.50	0.50	0.15	0.15	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.22	8.18	62.28	0.04	0.89	1.21	11.70	12.09	13.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

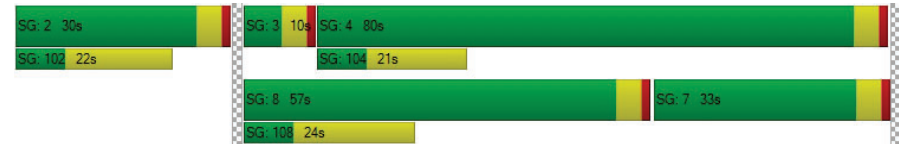
X, volume / capacity	0.72	0.80	1.06	0.31	0.39	0.42	0.91	0.90	0.91
d, Delay for Lane Group [s/veh]	63.69	53.18	109.66	18.32	9.79	10.41	59.48	59.84	61.48
Lane Group LOS	E	D	F	B	A	B	E	E	E
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.33	9.83	17.64	4.41	5.73	6.59	10.16	9.42	9.33
50th-Percentile Queue Length [ft/ln]	33.27	245.78	440.93	110.26	143.29	139.70	253.93	235.61	233.25
95th-Percentile Queue Length [veh/ln]	2.40	14.97	25.36	7.85	9.66	9.46	15.38	14.46	14.34
95th-Percentile Queue Length [ft/ln]	59.88	374.34	633.94	196.36	241.45	236.62	384.60	361.47	358.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.69	53.18	109.66	18.32	9.97	10.41	59.48	60.28	61.48	0.00	0.00	0.00
Movement LOS	E	D	F	B	A	B	E	E	E			
d_A, Approach Delay [s/veh]	83.52			13.04			60.24			0.00		
Approach LOS	F			B			E			A		
d_I, Intersection Delay [s/veh]	43.50											
Intersection LOS	D											
Intersection V/C	0.542											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.8
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.398

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	100	140	130	40	90	10	20	620	80	100	870	100
Base Volume Input [veh/h]	100	140	130	40	90	10	20	620	80	100	870	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	0	0	0	0	6	0	1	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	140	135	40	90	10	20	626	80	101	875	100
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	39	37	11	24	3	5	163	21	27	234	27
Total Analysis Volume [veh/h]	111	155	150	42	95	11	21	653	83	108	937	107
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	25	25	25	25	25	62	62	62	62	62	62
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.10	0.04	0.06	0.04	0.18	0.06	0.14	0.28	0.29
s, saturation flow rate [veh/h]	1153	1900	1449	1182	1819	549	3618	1425	778	1900	1739
c, Capacity [veh/h]	282	472	360	263	452	311	2241	883	469	1177	1077
d1, Uniform Delay [s]	36.96	30.69	31.44	36.35	29.93	16.53	8.82	7.67	13.88	10.03	10.25
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.15	0.29	0.10	0.10	0.42	0.33	0.21	1.14	1.25	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

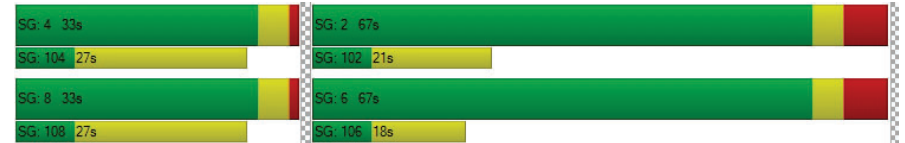
X, volume / capacity	0.39	0.33	0.42	0.16	0.23	0.07	0.29	0.09	0.23	0.45	0.48
d, Delay for Lane Group [s/veh]	37.29	30.84	31.72	36.45	30.02	16.95	9.15	7.88	15.03	11.28	11.76
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.43	3.01	3.00	0.88	2.01	0.32	3.16	0.73	1.49	6.07	6.04
50th-Percentile Queue Length [ft/ln]	60.78	75.32	74.90	22.11	50.21	7.88	79.07	18.22	37.27	151.78	150.95
95th-Percentile Queue Length [veh/ln]	4.38	5.42	5.39	1.59	3.62	0.57	5.69	1.31	2.68	10.11	10.07
95th-Percentile Queue Length [ft/ln]	109.40	135.57	134.82	39.80	90.38	14.18	142.33	32.80	67.09	252.81	251.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.29	30.84	31.72	36.45	30.02	30.02	16.95	9.15	7.88	15.03	11.49	11.76
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	32.88			31.85			9.23			11.84		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	15.78											
Intersection LOS	B											
Intersection V/C	0.398											

Sequence

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



Intersection Level Of Service Report

Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 24.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.496

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	120	240	50	40	220	30	30	320	60	50	230	70
Base Volume Input [veh/h]	120	240	50	40	220	30	30	320	60	50	230	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	5	0	0	0	1	0	-1	0	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	245	50	40	220	31	30	319	60	50	248	70
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	67	14	12	65	9	9	92	17	15	75	21
Total Analysis Volume [veh/h]	136	267	54	47	260	37	35	370	70	60	299	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	55	55	55	55	55	36	36
g / C, Green / Cycle	0.55	0.55	0.55	0.55	0.55	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.09	0.09	0.04	0.16	0.31	0.33
s, saturation flow rate [veh/h]	1066	1900	1713	1046	1817	1555	1330
c, Capacity [veh/h]	538	1042	939	574	996	598	520
d1, Uniform Delay [s]	18.18	11.17	11.24	14.17	12.20	28.48	29.93
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.17	0.21
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.13	0.32	0.38	0.28	0.77	3.75	7.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

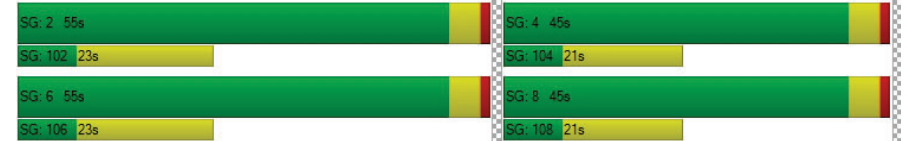
X, volume / capacity	0.25	0.16	0.17	0.08	0.30	0.79	0.85
d, Delay for Lane Group [s/veh]	19.32	11.49	11.62	14.45	12.96	32.22	37.44
Lane Group LOS	B	B	B	B	B	C	D
Critical Lane Group	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.12	1.78	1.73	0.60	3.56	10.44	11.07
50th-Percentile Queue Length [ft/ln]	53.03	44.61	43.26	15.05	88.96	261.03	276.83
95th-Percentile Queue Length [veh/ln]	3.82	3.21	3.11	1.08	6.41	15.74	16.53
95th-Percentile Queue Length [ft/ln]	95.45	80.30	77.87	27.09	160.13	393.52	413.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.32	11.54	11.62	14.45	12.96	12.96	32.22	32.22	32.22	37.44	37.44	37.44
Movement LOS	B	B	B	B	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	13.86			13.17			32.22			37.44		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	24.87											
Intersection LOS	C											
Intersection V/C	0.496											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 27.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.374

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	180	320	120	70	230	60	60	420	70	70	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	5	24	0	0	7	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	323	120	70	230	60	65	444	70	70	277	62
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8553	0.8553	0.8553	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	92	34	20	65	17	19	130	20	22	87	19
Total Analysis Volume [veh/h]	205	368	137	79	260	68	76	519	82	87	346	77
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.19	0.14	0.15	0.09	0.19	0.07	0.16	0.17	0.11	0.18	0.05
s, saturation flow rate [veh/h]	1068	1900	1570	892	1753	1026	1900	1720	814	1900	1400
c, Capacity [veh/h]	193	559	462	204	516	539	1090	986	448	1090	803
d1, Uniform Delay [s]	46.39	28.88	29.39	39.82	30.60	16.00	10.84	10.96	16.17	11.11	9.61
k, delay calibration	0.12	0.04	0.04	0.04	0.11	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	49.00	0.23	0.34	0.45	1.30	0.55	0.65	0.77	0.96	0.77	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.06	0.47	0.52	0.39	0.64	0.14	0.28	0.30	0.19	0.32	0.10
d, Delay for Lane Group [s/veh]	95.39	29.11	29.73	40.26	31.90	16.55	11.48	11.73	17.13	11.87	9.85
Lane Group LOS	F	C	C	D	C	B	B	B	B	B	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.40	5.08	4.74	1.81	6.84	1.09	3.47	3.38	1.29	4.02	0.78
50th-Percentile Queue Length [ft/ln]	184.99	127.09	118.60	45.18	170.96	27.14	86.84	84.62	32.31	100.45	19.55
95th-Percentile Queue Length [veh/ln]	12.24	8.78	8.32	3.25	11.13	1.95	6.25	6.09	2.33	7.23	1.41
95th-Percentile Queue Length [ft/ln]	305.97	219.54	207.90	81.32	278.18	48.86	156.31	152.31	58.16	180.81	35.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	95.39	29.29	29.73	40.26	31.90	31.90	16.55	11.58	11.73	17.13	11.87	9.85
Movement LOS	F	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	48.46			33.52			12.16			12.46		
Approach LOS	D			C			B			B		
d_I, Intersection Delay [s/veh]	27.19											
Intersection LOS	C											
Intersection V/C	0.374											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 22.4
Level Of Service: C
Volume to Capacity (v/c): 0.448

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	Base Volume Input [veh/h]	120	470	130	60	170	130	100	340	80	80	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	-3	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	473	130	60	170	130	100	337	80	80	370	80
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	124	34	17	47	36	27	90	21	22	102	22
Total Analysis Volume [veh/h]	126	496	136	67	189	145	106	359	85	88	409	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	31	31	31	31	31	59	59	59	59	59
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.31	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.12	0.17	0.18	0.08	0.20	0.11	0.25	0.09	0.22	0.06
s, saturation flow rate [veh/h]	1063	1900	1665	806	1682	976	1784	951	1900	1426
c, Capacity [veh/h]	199	594	521	181	526	526	1061	493	1131	848
d1, Uniform Delay [s]	43.93	28.50	28.87	40.69	29.43	16.01	10.90	17.08	10.43	8.72
k, delay calibration	0.04	0.05	0.07	0.04	0.12	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	0.34	0.72	0.47	1.38	0.86	1.21	0.79	0.90	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.55	0.58	0.37	0.63	0.20	0.42	0.18	0.36	0.10
d, Delay for Lane Group [s/veh]	45.17	28.84	29.59	41.15	30.81	16.87	12.11	17.87	11.33	8.97
Lane Group LOS	D	C	C	D	C	B	B	B	B	A
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	3.12	6.37	6.05	1.55	6.85	1.52	5.17	1.31	4.53	0.82
50th-Percentile Queue Length [ft/ln]	77.89	159.15	151.27	38.70	171.22	38.05	129.32	32.70	113.18	20.54
95th-Percentile Queue Length [veh/ln]	5.61	10.50	10.08	2.79	11.14	2.74	8.90	2.35	8.02	1.48
95th-Percentile Queue Length [ft/ln]	140.20	262.59	252.12	69.66	278.52	68.49	222.57	58.86	200.42	36.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.17	29.09	29.59	41.15	30.81	30.81	16.87	12.11	12.11	17.87	11.33	8.97
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	31.86			32.54			13.03			11.96		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	22.39											
Intersection LOS	C											
Intersection V/C	0.448											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.8
Level Of Service: C
Volume to Capacity (v/c): 0.418

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	610	80	60	30	210	0	0	0	6	180	80
Base Volume Input [veh/h]	14	610	80	60	30	210	0	0	0	6	180	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	613	80	60	30	210	0	0	0	6	180	80
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	169	22	18	9	62	0	0	0	2	59	26
Total Analysis Volume [veh/h]	15	674	88	71	35	248	0	0	0	6	238	106
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	6	49	40
g / C, Green / Cycle	0.39	0.39	0.06	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.19	0.07	0.04	0.18	0.19
s, saturation flow rate [veh/h]	3618	1338	1810	1581	1789
c, Capacity [veh/h]	1398	517	109	780	724
d1, Uniform Delay [s]	23.11	20.13	45.92	15.65	21.91
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.19	0.71	2.42	1.31	2.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

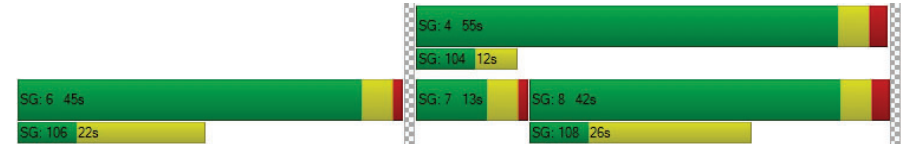
X, volume / capacity	0.48	0.17	0.65	0.36	0.47
d, Delay for Lane Group [s/veh]	24.30	20.84	48.34	16.96	24.13
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	6.09	1.43	1.77	4.06	6.26
50th-Percentile Queue Length [ft/ln]	152.15	35.84	44.30	101.51	156.56
95th-Percentile Queue Length [veh/ln]	10.13	2.58	3.19	7.31	10.37
95th-Percentile Queue Length [ft/ln]	253.29	64.52	79.73	182.71	259.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	24.30	20.84	48.34	16.96	16.96	0.00	0.00	0.00	0.00	24.13	24.13
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		23.90		23.25		0.00				24.13		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		23.80										
Intersection LOS		C										
Intersection V/C		0.418										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 15.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.404

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	30	140	30	30	110	20	30	360	40	40	290	50
Base Volume Input [veh/h]	30	140	30	30	110	20	30	360	40	40	290	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	0	-1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	140	30	30	110	20	30	359	40	40	299	50
Peak Hour Factor	0.9215	0.9215	0.9215	0.9000	0.9000	0.9000	0.9174	0.9174	0.9174	0.9183	0.9183	0.9183
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	38	8	8	31	6	8	98	11	11	81	14
Total Analysis Volume [veh/h]	42	152	33	33	122	22	33	391	44	44	326	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	18	18	73	73	73
g / C, Green / Cycle	0.18	0.18	0.73	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.14	0.12	0.26	0.22	0.03
s, saturation flow rate [veh/h]	1582	1498	1797	1667	1575
c, Capacity [veh/h]	326	311	1348	1256	1148
d1, Uniform Delay [s]	39.08	37.52	4.91	4.56	3.81
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	0.61	0.71	0.60	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.57	0.35	0.29	0.05
d, Delay for Lane Group [s/veh]	40.09	38.13	5.62	5.16	3.88
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.32	3.95	3.04	2.25	0.27
50th-Percentile Queue Length [ft/ln]	132.91	98.82	75.97	56.18	6.82
95th-Percentile Queue Length [veh/ln]	9.10	7.12	5.47	4.04	0.49
95th-Percentile Queue Length [ft/ln]	227.45	177.88	136.74	101.12	12.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.09	40.09	40.09	38.13	38.13	38.13	5.62	5.62	5.62	5.16	5.16	3.88
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.09			38.13			5.62			5.00		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	15.89											
Intersection LOS	B											
Intersection V/C	0.404											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.509

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	20	80	40	70	110	20	20	580	60	60	310	50
Base Volume Input [veh/h]	20	80	40	70	110	20	20	580	60	60	310	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	0	0	0	24	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	87	40	70	110	20	20	604	60	60	320	52
Peak Hour Factor	0.7916	0.7916	0.7916	0.9068	0.9068	0.9068	0.8681	0.8681	0.8681	0.9554	0.9554	0.9554
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	27	13	19	30	6	6	174	17	16	84	14
Total Analysis Volume [veh/h]	25	110	51	77	121	22	23	696	69	63	335	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	21	21	21	21	66	66	66	66	66	66
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.66	0.66	0.66	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.02	0.10	0.07	0.09	0.02	0.41	0.05	0.09	0.20	0.04
s, saturation flow rate [veh/h]	1093	1582	1092	1638	944	1710	1376	685	1710	1353
c, Capacity [veh/h]	189	324	173	336	603	1133	912	356	1133	897
d1, Uniform Delay [s]	40.81	35.16	44.26	34.60	9.83	9.58	5.98	18.85	7.06	5.92
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	0.44	0.67	0.32	0.12	2.49	0.16	1.08	0.66	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.50	0.44	0.43	0.04	0.61	0.08	0.18	0.30	0.06
d, Delay for Lane Group [s/veh]	40.93	35.59	44.92	34.92	9.95	12.07	6.14	19.94	7.73	6.04
Lane Group LOS	D	D	D	C	A	B	A	B	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.56	3.44	1.86	3.00	0.24	8.40	0.51	1.04	2.91	0.40
50th-Percentile Queue Length [ft/ln]	14.02	85.92	46.51	74.98	5.97	209.97	12.80	25.88	72.80	9.92
95th-Percentile Queue Length [veh/ln]	1.01	6.19	3.35	5.40	0.43	13.15	0.92	1.86	5.24	0.71
95th-Percentile Queue Length [ft/ln]	25.24	154.65	83.73	134.97	10.75	328.79	23.05	46.59	131.05	17.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.93	35.59	35.59	44.92	34.92	34.92	9.95	12.07	6.14	19.94	7.73	6.04
Movement LOS	D	D	D	D	C	C	A	B	A	B	A	A
d_A, Approach Delay [s/veh]	36.31			38.42			11.49			9.23		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	17.27											
Intersection LOS	B											
Intersection V/C	0.509											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 20.5
Level Of Service: C
Volume to Capacity (v/c): 0.418

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TT			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	60	260	40	50	220	30	20	360	60	30	290	50
Base Volume Input [veh/h]	60	260	40	50	220	30	20	360	60	30	290	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	-1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	260	40	50	220	30	20	359	60	30	299	50
Peak Hour Factor	0.8626	0.8626	0.8626	0.9385	0.9385	0.9385	0.8974	0.8974	0.8974	0.9335	0.9335	0.9335
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	75	12	13	59	8	6	100	17	8	80	13
Total Analysis Volume [veh/h]	70	301	46	53	234	32	22	400	67	32	320	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	27	27	27	27	64	64	64
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.05	0.15	0.23	0.04	0.23
s, saturation flow rate [veh/h]	1113	1840	1049	1830	1857	1570	1769
c, Capacity [veh/h]	202	500	146	497	1219	999	1164
d1, Uniform Delay [s]	41.60	32.66	45.46	31.01	8.51	6.92	8.48
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.65	0.56	0.33	0.78	0.13	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.69	0.36	0.53	0.35	0.07	0.35
d, Delay for Lane Group [s/veh]	41.98	33.31	46.03	31.34	9.29	7.04	9.31
Lane Group LOS	D	C	D	C	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.65	7.59	1.31	5.51	4.07	0.53	3.92
50th-Percentile Queue Length [ft/ln]	41.33	189.81	32.85	137.66	101.78	13.18	97.96
95th-Percentile Queue Length [veh/ln]	2.98	12.11	2.36	9.35	7.33	0.95	7.05
95th-Percentile Queue Length [ft/ln]	74.39	302.79	59.12	233.86	183.20	23.72	176.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.98	33.31	33.31	46.03	31.34	31.34	9.29	9.29	7.04	9.31	9.31	9.31
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.76			33.78			8.98			9.31		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	20.51											
Intersection LOS	C											
Intersection V/C	0.418											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.432

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	60	250	50	120	220	30	20	490	50	50	440	80
Base Volume Input [veh/h]	60	250	50	120	220	30	20	490	50	50	440	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	24	0	0	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	250	50	120	220	30	20	514	50	50	452	80
Peak Hour Factor	0.9010	0.9010	0.9010	0.8750	0.8750	0.8750	0.9051	0.9051	0.9051	0.9496	0.9496	0.9496
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	69	14	34	63	9	6	142	14	13	119	21
Total Analysis Volume [veh/h]	67	277	55	137	251	34	22	568	55	53	476	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.13	0.15	0.02	0.17	0.17	0.07	0.25	0.05
s, saturation flow rate [veh/h]	1104	1833	1061	1850	930	1900	1825	810	1900	1547
c, Capacity [veh/h]	221	521	186	526	464	1109	1065	458	1109	903
d1, Uniform Delay [s]	39.81	31.24	45.51	30.25	17.13	10.38	10.41	14.66	11.55	9.16
k, delay calibration	0.04	0.12	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	1.41	2.15	0.32	0.19	0.65	0.68	0.51	1.22	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.64	0.74	0.54	0.05	0.28	0.29	0.12	0.43	0.09
d, Delay for Lane Group [s/veh]	40.09	32.65	47.65	30.57	17.32	11.03	11.09	15.18	12.77	9.36
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.54	7.18	3.55	5.85	0.32	3.48	3.40	0.73	5.88	0.82
50th-Percentile Queue Length [ft/ln]	38.53	179.58	88.75	146.19	8.04	87.06	85.12	18.15	147.01	20.53
95th-Percentile Queue Length [veh/ln]	2.77	11.58	6.39	9.81	0.58	6.27	6.13	1.31	9.86	1.48
95th-Percentile Queue Length [ft/ln]	69.36	289.46	159.74	245.33	14.48	156.70	153.21	32.68	246.43	36.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.09	32.65	32.65	47.65	30.57	30.57	17.32	11.06	11.09	15.18	12.77	9.36
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	33.90			36.12			11.27			12.51		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.02											
Intersection LOS	C											
Intersection V/C	0.432											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.506

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	260	350	170	60	290	30	20	710	200	150	960	70
Base Volume Input [veh/h]	260	350	170	60	290	30	20	710	200	150	960	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	10	0	3	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	260	350	170	60	290	30	20	720	200	153	966	70
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	93	45	19	90	9	5	189	52	41	257	19
Total Analysis Volume [veh/h]	275	370	180	75	361	37	21	755	210	163	1029	75
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.22	0.19	0.12	0.07	0.11	0.11	0.04	0.21	0.14	0.18	0.28	0.05
s, saturation flow rate [veh/h]	1231	1900	1525	1011	1900	1819	553	3618	1487	907	3618	1443
c, Capacity [veh/h]	447	670	538	127	442	423	207	1591	654	506	2008	801
d1, Uniform Delay [s]	26.55	26.01	23.74	48.05	32.93	33.01	29.65	19.84	18.28	12.26	13.83	10.44
k, delay calibration	0.50	0.05	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.20	0.34	0.13	1.65	0.27	0.30	0.98	1.02	1.30	1.68	0.94	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.55	0.33	0.59	0.46	0.46	0.10	0.47	0.32	0.32	0.51	0.09
d, Delay for Lane Group [s/veh]	32.75	26.35	23.88	49.69	33.20	33.30	30.62	20.85	19.57	13.94	14.77	10.67
Lane Group LOS	C	C	C	D	C	C	C	C	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.66	6.99	3.10	1.91	4.13	4.04	0.45	6.28	3.34	1.90	6.92	0.78
50th-Percentile Queue Length [ft/ln]	141.50	174.80	77.44	47.70	103.27	101.09	11.29	156.99	83.47	47.38	173.02	19.61
95th-Percentile Queue Length [veh/ln]	9.56	11.33	5.58	3.43	7.44	7.28	0.81	10.39	6.01	3.41	11.24	1.41
95th-Percentile Queue Length [ft/ln]	239.04	283.22	139.39	85.86	185.89	181.97	20.32	259.73	150.25	85.28	280.88	35.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.75	26.35	23.88	49.69	33.25	33.30	30.62	20.85	19.57	13.94	14.77	10.67
Movement LOS	C	C	C	D	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	27.94			35.86			20.79			14.42		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	22.19											
Intersection LOS	C											
Intersection V/C	0.506											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 29.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.648

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	180	730	70	20	520	30	20	190	220	40	150	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	3	0	-1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	186	730	70	20	520	33	20	189	220	40	150	40
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	192	18	6	154	10	5	50	58	11	41	11
Total Analysis Volume [veh/h]	196	769	74	24	616	39	21	201	234	44	164	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6	6
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18	18
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No	
Maximum Recall	No	No		No	No			No				No	
Pedestrian Recall	No	No		No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	55	55	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.55	0.55	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.21	0.23	0.23	0.03	0.17	0.18	0.25	0.16	0.41	0.03
s, saturation flow rate [veh/h]	944	1900	1817	772	1900	1846	892	1461	502	1508
c, Capacity [veh/h]	629	1054	1008	513	987	958	283	399	181	412
d1, Uniform Delay [s]	8.12	12.78	12.83	7.60	13.99	14.02	30.98	31.47	32.14	27.22
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.28	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.29	1.16	1.24	0.17	0.92	0.96	11.66	0.51	113.43	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

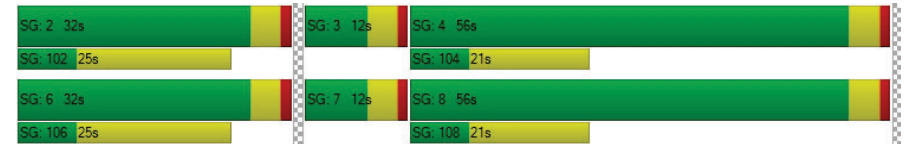
X, volume / capacity	0.31	0.41	0.41	0.05	0.34	0.34	0.78	0.59	1.15	0.11
d, Delay for Lane Group [s/veh]	9.41	13.94	14.08	7.77	14.90	14.97	42.63	31.98	145.57	27.27
Lane Group LOS	A	B	B	A	B	B	D	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.82	5.58	5.45	0.20	4.45	4.38	5.21	4.81	9.10	0.78
50th-Percentile Queue Length [ft/ln]	45.57	139.60	136.33	5.03	111.17	109.50	130.18	120.32	227.58	19.46
95th-Percentile Queue Length [veh/ln]	3.28	9.46	9.28	0.36	7.91	7.81	8.95	8.41	15.10	1.40
95th-Percentile Queue Length [ft/ln]	82.02	236.48	232.07	9.06	197.63	195.30	223.74	210.27	377.41	35.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.41	14.00	14.08	7.77	14.93	14.97	42.63	42.63	31.98	145.57	145.57	27.27
Movement LOS	A	B	B	A	B	B	D	D	C	F	F	C
d_A, Approach Delay [s/veh]	13.14			14.68			37.17			124.92		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	29.70											
Intersection LOS	C											
Intersection V/C	0.648											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 32.6
Level Of Service: C
Volume to Capacity (v/c): 0.610

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	140	810	100	160	590	40	40	500	220	120	340	150
Base Volume Input [veh/h]	140	810	100	160	590	40	40	500	220	120	340	150
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-3	6	0	0	0	0	0	15	9	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	816	100	160	590	40	40	515	229	120	355	150
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	210	26	42	156	11	11	143	64	33	98	41
Total Analysis Volume [veh/h]	141	839	103	169	624	42	44	573	255	132	391	165
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	55	43	43	55	43	43	25	25	25	36	36	36
g / C, Green / Cycle	0.55	0.43	0.43	0.55	0.43	0.43	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.15	0.25	0.26	0.21	0.18	0.18	0.04	0.23	0.25	0.14	0.21	0.11
s, saturation flow rate [veh/h]	960	1900	1802	815	1900	1840	983	1900	1576	971	1900	1452
c, Capacity [veh/h]	537	817	775	435	819	793	130	470	390	295	688	526
d1, Uniform Delay [s]	12.10	21.73	21.83	14.02	19.67	19.71	46.34	36.78	37.64	25.38	25.60	22.94
k, delay calibration	0.35	0.50	0.50	0.50	0.50	0.50	0.04	0.23	0.28	0.29	0.07	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	3.08	3.36	2.60	1.52	1.60	0.57	15.37	35.48	2.84	0.45	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.59	0.60	0.39	0.41	0.42	0.34	0.93	1.01	0.45	0.57	0.31
d, Delay for Lane Group [s/veh]	12.92	24.81	25.20	16.62	21.19	21.31	46.91	52.15	73.13	28.22	26.05	23.07
Lane Group LOS	B	C	C	B	C	C	D	D	F	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.62	9.02	8.78	2.13	5.64	5.54	1.09	12.20	13.16	2.34	7.38	2.78
50th-Percentile Queue Length [ft/ln]	40.38	225.58	219.41	53.31	140.99	138.56	27.26	305.04	329.07	58.55	184.47	69.39
95th-Percentile Queue Length [veh/ln]	2.91	13.95	13.63	3.84	9.53	9.40	1.96	17.93	19.17	4.22	11.83	5.00
95th-Percentile Queue Length [ft/ln]	72.68	348.74	340.87	95.96	238.36	235.09	49.07	448.25	479.27	105.39	295.84	124.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.92	24.97	25.20	16.62	21.25	21.31	46.91	57.16	73.13	28.22	26.05	23.07
Movement LOS	B	C	C	B	C	C	D	E	E	C	C	C
d_A, Approach Delay [s/veh]	23.43			20.31			61.31			25.75		
Approach LOS	C			C			E			C		
d_I, Intersection Delay [s/veh]	32.64											
Intersection LOS	C											
Intersection V/C	0.610											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 37.9
Level Of Service: D
Volume to Capacity (v/c): 0.673

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	200	980	100	60	860	60	60	240	240	130	240	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	9	0	0	0	-3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	983	100	60	869	60	60	240	237	130	240	80
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	267	27	16	236	16	16	62	61	35	65	22
Total Analysis Volume [veh/h]	217	1066	108	65	945	65	62	249	245	140	259	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	11	51	51	36	36	36	26	26	26	35	35
g / C, Green / Cycle	0.11	0.51	0.51	0.36	0.36	0.36	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.12	0.31	0.33	0.13	0.27	0.28	0.05	0.13	0.18	0.30	0.06
s, saturation flow rate [veh/h]	1810	1900	1780	485	1900	1812	1138	1900	1352	1314	1366
c, Capacity [veh/h]	194	978	917	125	688	656	73	488	347	460	482
d1, Uniform Delay [s]	44.65	17.12	17.43	45.59	27.83	28.09	50.00	31.78	33.72	29.57	22.33
k, delay calibration	0.21	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.17	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	78.97	2.81	3.30	14.71	7.11	8.14	10.17	0.31	4.05	19.32	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.12	0.61	0.63	0.52	0.74	0.76	0.86	0.51	0.71	0.87	0.18
d, Delay for Lane Group [s/veh]	123.61	19.93	20.74	60.30	34.94	36.23	60.17	32.08	37.77	48.89	22.40
Lane Group LOS	F	B	C	E	C	D	E	C	D	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	9.00	9.94	9.94	2.13	11.71	11.70	1.73	5.06	5.63	10.00	1.37
50th-Percentile Queue Length [ft/ln]	225.12	248.50	248.55	53.19	292.74	292.46	43.36	126.54	140.82	250.09	34.29
95th-Percentile Queue Length [veh/ln]	14.55	15.11	15.11	3.83	17.32	17.31	3.12	8.75	9.52	15.19	2.47
95th-Percentile Queue Length [ft/ln]	363.73	377.77	377.83	95.74	433.04	432.69	78.04	218.78	238.12	379.77	61.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.61	20.29	20.74	60.30	35.53	36.23	60.17	32.08	37.77	48.89	48.89	22.40
Movement LOS	F	C	C	E	D	D	E	C	D	D	D	C
d_A, Approach Delay [s/veh]	36.44			37.07			37.72			44.19		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	37.91											
Intersection LOS	D											
Intersection V/C	0.673											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 53.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.628

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	180	1130	60	20	1170	30	6	90	170	66	180	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	186	1133	60	20	1176	30	6	90	170	66	180	90
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	299	16	5	306	8	2	27	50	18	51	25
Total Analysis Volume [veh/h]	196	1195	63	21	1225	31	7	106	201	70	203	101
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	96	96	96	96	96	96	96	96
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	12	39	39	3	30	30	40	40
g / C, Green / Cycle	0.13	0.41	0.41	0.03	0.31	0.31	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.33	0.34	0.01	0.33	0.33	0.19	0.17
s, saturation flow rate [veh/h]	1810	1900	1851	1810	1900	1872	1654	1778
c, Capacity [veh/h]	230	772	752	60	594	585	689	741
d1, Uniform Delay [s]	41.00	25.37	25.54	45.40	33.02	33.02	20.07	19.72
k, delay calibration	0.12	0.48	0.49	0.04	0.48	0.49	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.62	9.21	10.24	1.28	53.81	56.62	2.08	1.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

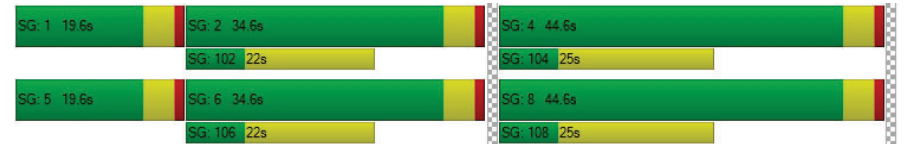
X, volume / capacity	0.85	0.82	0.83	0.35	1.06	1.07	0.45	0.41
d, Delay for Lane Group [s/veh]	50.62	34.57	35.77	46.68	86.82	89.64	22.15	21.40
Lane Group LOS	D	C	D	D	D	F	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.10	14.25	14.33	0.51	22.21	22.34	5.18	4.99
50th-Percentile Queue Length [ft/ln]	127.46	356.16	358.18	12.71	555.20	558.57	129.38	124.81
95th-Percentile Queue Length [veh/ln]	8.80	20.44	20.53	0.92	31.13	31.43	8.91	8.66
95th-Percentile Queue Length [ft/ln]	220.04	510.91	513.36	22.88	778.30	785.69	222.65	216.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.62	35.14	35.77	46.68	88.19	89.64	0.00	22.15	22.15	0.00	21.40	21.40
Movement LOS	D	D	D	D	F	F		C	C		C	C
d_A, Approach Delay [s/veh]	37.25			87.54			22.15			21.40		
Approach LOS	D			F			C			C		
d_I, Intersection Delay [s/veh]	53.64											
Intersection LOS	D											
Intersection V/C	0.628											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 53.0
 Level Of Service: D
 Volume to Capacity (v/c): 0.834

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	320	700	0	1370	50	0	0	0	0	700	560
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	320	709	0	1376	50	0	0	0	0	700	560	720
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	204	0	362	13	0	0	0	0	193	154	198
Total Analysis Volume [veh/h]	368	814	0	1449	53	0	0	0	0	770	616	792
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.28	0.27	0.31	0.30	0.32	0.35
s, saturation flow rate [veh/h]	1810	3618	3618	1861	1810	1864	1577	1573
c, Capacity [veh/h]	337	2123	1310	674	609	627	531	529
d1, Uniform Delay [s]	48.76	13.20	33.73	33.38	38.13	37.64	38.89	39.77
k, delay calibration	0.48	0.50	0.50	0.50	0.37	0.35	0.40	0.49
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	74.46	0.53	4.29	7.27	16.45	12.62	25.73	53.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.09	0.38	0.76	0.74	0.92	0.89	0.96	1.05
d, Delay for Lane Group [s/veh]	123.22	13.73	38.02	40.65	54.58	50.25	64.63	92.95
Lane Group LOS	F	B	D	D	D	D	E	F
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	17.02	5.87	13.50	13.95	17.70	16.92	17.64	22.60
50th-Percentile Queue Length [ft/ln]	425.47	146.78	337.56	348.71	442.5	423.1	441.0	565.1
95th-Percentile Queue Length [veh/ln]	24.88	9.84	19.53	20.07	24.60	23.67	24.53	31.46
95th-Percentile Queue Length [ft/ln]	622.06	246.12	488.22	501.83	615.0	591.7	613.2	786.5

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.22	13.73	0.00	0.00	38.83	40.65	0.00	0.00	0.00	53.31	56.60	84.66
Movement LOS	F	B			D	D				D	E	F
d_A, Approach Delay [s/veh]	47.82		38.90		0.00		65.62					
Approach LOS	D		D		A		E					
d_I, Intersection Delay [s/veh]	53.04											
Intersection LOS	D											
Intersection V/C	0.834											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 36.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.762

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	870	720	770	1280	0	120	110	320	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	-3	9	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	879	720	767	1289	0	120	110	320	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	244	200	206	346	0	34	32	92	0	0	0
Total Analysis Volume [veh/h]	0	975	799	824	1384	0	138	126	367	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	38	38	38	42	85	25	25	25
g / C, Green / Cycle	0.32	0.32	0.32	0.35	0.71	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29	0.29	0.23	0.38	0.08	0.07	0.23
s, saturation flow rate [veh/h]	3618	1504	1504	3514	3618	1810	1729	1579
c, Capacity [veh/h]	1158	481	481	1241	2574	383	366	334
d1, Uniform Delay [s]	36.74	39.33	39.33	32.79	8.09	40.34	40.20	47.28
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.37
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	3.22	3.22	2.82	0.81	0.21	0.21	71.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.92	0.92	0.66	0.54	0.36	0.34	1.10
d, Delay for Lane Group [s/veh]	37.14	42.55	42.55	35.61	8.90	40.55	40.40	118.59
Lane Group LOS	D	D	D	D	A	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.55	12.73	12.73	10.54	7.83	3.48	3.17	16.45
50th-Percentile Queue Length [ft/ln]	288.78	318.14	318.14	263.42	195.76	87.07	79.22	411.20
95th-Percentile Queue Length [veh/ln]	17.12	18.58	18.58	15.86	12.42	6.27	5.70	24.28
95th-Percentile Queue Length [ft/ln]	428.12	464.40	464.40	396.51	310.49	156.72	142.59	607.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	37.14	42.55	35.61	8.90	0.00	40.55	40.40	118.59	0.00	0.00	0.00
Movement LOS		D	D	D	A		D	D	F			
d_A, Approach Delay [s/veh]		39.85			18.86			85.91			0.00	
Approach LOS		D			B			F			A	
d_I, Intersection Delay [s/veh]		36.10										
Intersection LOS		D										
Intersection V/C		0.762										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 46.1
Level Of Service: D
Volume to Capacity (v/c): 0.582

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	590	270	100	820	140	190
Base Volume Input [veh/h]	590	270	100	820	140	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	0	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	616	270	100	822	140	190
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	172	75	31	258	40	55
Total Analysis Volume [veh/h]	688	301	125	1031	161	218
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
11, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
12, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.19	0.22	0.17	0.28	0.19	0.30
s, saturation flow rate [veh/h]	3618	1353	749	3618	832	734
c, Capacity [veh/h]	2509	938	521	2509	145	128
d1, Uniform Delay [s]	5.80	6.04	9.65	6.57	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.13	0.42
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	0.90	1.09	0.50	70.75	341.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.32	0.24	0.41	1.11	1.70
d, Delay for Lane Group [s/veh]	6.07	6.95	10.74	7.07	112.02	383.01
Lane Group LOS	A	A	B	A	F	F
Critical Lane Group	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.48	2.41	1.39	4.23	6.34	15.24
50th-Percentile Queue Length [ft/ln]	62.07	60.31	34.87	105.70	158.59	381.09
95th-Percentile Queue Length [veh/ln]	4.47	4.34	2.51	7.60	10.94	26.01
95th-Percentile Queue Length [ft/ln]	111.73	108.55	62.76	190.00	273.58	650.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.07	6.95	10.74	7.07	112.02	383.01
Movement LOS	A	A	B	A	F	F
d_A, Approach Delay [s/veh]	6.34		7.47		267.90	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	46.13					
Intersection LOS	D					
Intersection V/C	0.582					

Sequence

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



Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 79.8
Level Of Service: E
Volume to Capacity (v/c): 0.619

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	30	250	160	240	190	30	80	260	60	50	230	120
Base Volume Input [veh/h]	30	250	160	240	190	30	80	260	60	50	230	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	10	19	0	0	1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	254	160	250	209	30	80	261	60	50	230	120
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	71	45	70	59	8	21	68	16	15	67	35
Total Analysis Volume [veh/h]	34	285	180	281	235	34	84	273	63	59	269	141
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	49	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.54	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.03	0.27	0.26	0.15	0.08	0.19	0.06	0.27
s, saturation flow rate [veh/h]	1194	1692	1063	1823	991	1780	1061	1504
c, Capacity [veh/h]	777	875	616	990	80	325	80	274
d1, Uniform Delay [s]	6.70	14.46	9.53	11.02	45.02	36.81	45.02	36.81
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.20
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	2.31	2.43	0.68	42.16	24.14	4.85	230.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

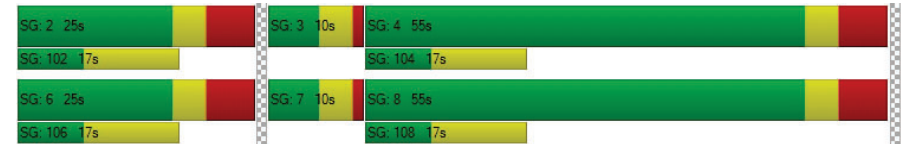
X, volume / capacity	0.04	0.53	0.46	0.27	1.05	1.03	0.74	1.49
d, Delay for Lane Group [s/veh]	6.71	16.77	11.96	11.69	87.18	60.94	49.87	267.01
Lane Group LOS	A	B	B	B	F	F	D	F
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.22	6.32	2.56	2.88	2.71	9.15	1.40	23.36
50th-Percentile Queue Length [ft/ln]	5.44	157.92	64.05	71.96	67.74	228.85	34.99	583.90
95th-Percentile Queue Length [veh/ln]	0.39	10.44	4.61	5.18	4.88	14.35	2.52	36.94
95th-Percentile Queue Length [ft/ln]	9.79	260.96	115.30	129.52	121.93	358.79	62.98	923.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.71	16.77	16.77	11.96	11.69	11.69	87.18	60.94	60.94	49.87	267.01	267.01
Movement LOS	A	B	B	B	B	B	F	E	E	D	F	F
d_A, Approach Delay [s/veh]	16.08			11.83			66.19			239.70		
Approach LOS	B			B			E			F		
d_I, Intersection Delay [s/veh]	79.85											
Intersection LOS	E											
Intersection V/C	0.619											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 34.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.542

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Approach	Northbound				Southbound				Eastbound				Westbound				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
Base Volume Input [veh/h]	10	0	900	110	270	960	0	32	1085	209	80	0	200	80	0	200
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	18	0	1	1	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	0	918	110	271	961	0	32	1085	209	80	0	200	80	0	200
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	246	30	75	265	0	8	271	52	25	0	62	25	0	62
Total Analysis Volume [veh/h]	10	0	985	118	299	1060	0	32	1085	209	100	0	250	100	0	250
Presence of On-Street Parking	No			No	No	No	No				No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0			
Bicycle Volume [bicycles/h]	22				6				42				51			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk			No			No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	104	104	117	111	23	23
g / C, Green / Cycle	0.01	0.69	0.69	0.78	0.74	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.27	0.07	0.43	0.29	0.08	0.22
s, saturation flow rate [veh/h]	1810	3618	1584	699	3618	1231	1132
c, Capacity [veh/h]	21	2509	1099	550	2678	192	177
d1, Uniform Delay [s]	73.64	9.68	7.61	6.44	7.15	58.07	63.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.28	0.46	0.20	3.82	0.44	0.81	216.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.39	0.11	0.54	0.40	0.52	1.41
d, Delay for Lane Group [s/veh]	79.92	10.14	7.81	10.27	7.59	58.88	279.36
Lane Group LOS	E	B	A	B	A	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.42	6.84	1.32	2.80	6.11	3.55	17.38
50th-Percentile Queue Length [ft/ln]	10.53	171.08	32.97	69.89	152.64	88.87	434.46
95th-Percentile Queue Length [veh/ln]	0.76	11.13	2.37	5.03	10.16	6.40	27.80
95th-Percentile Queue Length [ft/ln]	18.96	278.33	59.35	125.80	253.95	159.97	694.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	79.92	0.00	10.14	7.81	10.27	7.59	0.00	0.00	0.00	0.00	58.88	0.00	279.36
Movement LOS	E		B	A	B	A					E		F
d_A, Approach Delay [s/veh]	10.52			8.18			0.00			216.37			
Approach LOS	B			A			A			F			
d_I, Intersection Delay [s/veh]	34.92												
Intersection LOS	C												
Intersection V/C	0.542												

Sequence

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



FUTURE (2025) NO PROJECT CONDITIONS

Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 65.4
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.109

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Base Volume Input [veh/h]	20	2660	2	370	3570	30	10	10	10	170	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	2660	2	370	3570	30	10	10	10	170	20	260
Peak Hour Factor	0.8779	0.8779	1.0000	0.9383	0.9383	0.9383	0.8500	0.8500	0.8500	0.9161	0.9161	0.9161
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	757	1	99	951	8	3	3	3	46	5	71
Total Analysis Volume [veh/h]	23	3030	2	394	3805	32	12	12	12	186	22	284
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	6	25	0	6	25	0	6	6	0	0	6	6	
Maximum Green [s]	15	142	0	60	187	0	38	38	0	0	38	38	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	2.0	2.0	
Split [s]	15	142	0	60	187	0	40	40	0	0	40	40	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	5	5	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	13	13	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	3.2	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	Yes	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	240	240	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	5.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	3.20	0.00
g_i, Effective Green Time [s]	5	135	54	185	185	36	35	94
g / C, Green / Cycle	0.02	0.56	0.23	0.77	0.77	0.15	0.15	0.39
(v / s)_i Volume / Saturation Flow Rate	0.01	0.59	0.22	0.70	0.70	0.18	0.31	0.18
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1892	200	680	1594
c, Capacity [veh/h]	36	2918	408	2783	1455	50	127	625
d1, Uniform Delay [s]	116.81	52.39	92.06	20.99	21.20	92.60	106.81	53.96
k, delay calibration	0.04	0.50	0.35	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.81	27.63	29.70	5.41	9.84	62.40	319.73	2.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

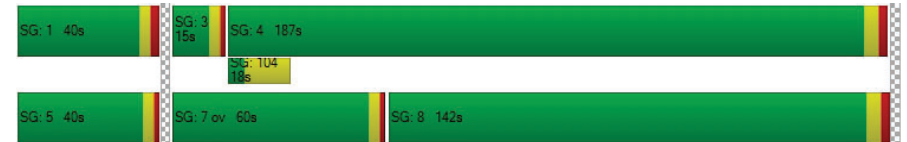
X, volume / capacity	0.64	1.04	0.96	0.90	0.91	0.72	1.64	0.45
d, Delay for Lane Group [s/veh]	123.62	80.01	121.76	26.40	31.04	154.99	426.54	56.33
Lane Group LOS	F	F	F	C	C	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.51	64.36	27.59	50.82	55.67	3.16	19.41	13.51
50th-Percentile Queue Length [ft/ln]	37.71	1609.07	689.87	1270.61	1391.86	79.05	485.29	337.63
95th-Percentile Queue Length [veh/ln]	2.71	80.17	36.21	62.52	67.91	5.69	31.64	19.53
95th-Percentile Queue Length [ft/ln]	67.87	2004.23	905.25	1562.91	1697.79	142.30	790.90	488.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.62	80.01	0.00	121.76	27.97	31.04	154.99	154.99	154.99	426.54	426.54	56.33
Movement LOS	F	F		F	C	C	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	80.34		36.73			154.99		212.84				
Approach LOS	F		D			F		F				
d_I, Intersection Delay [s/veh]	65.41											
Intersection LOS	E											
Intersection V/C	1.109											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 57.3
Level Of Service: E
Volume to Capacity (v/c): 0.747

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration	T T			T T			T T			T T			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Base Volume Input [veh/h]	210	350	50	20	380	120	40	100	380	0	30	110	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	350	50	20	380	120	40	100	380	0	30	110	50
Peak Hour Factor	0.8497	0.8497	0.8497	0.9162	0.9162	0.9162	0.8326	0.8326	0.8326	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	103	15	5	104	33	12	30	114	0	8	29	13
Total Analysis Volume [veh/h]	247	412	59	22	415	131	48	120	456	0	32	117	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	32			62			86			124			
Bicycle Volume [bicycles/h]	1			14			14			39			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	77.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	2	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.02	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.04	0.01	0.22	0.09	0.34	0.30	0.22	0.04
s, saturation flow rate [veh/h]	1810	1900	1422	1810	1900	1440	497	1542	667	1213
c, Capacity [veh/h]	189	1166	872	42	1012	767	138	579	167	224
d1, Uniform Delay [s]	44.75	9.53	7.78	48.26	13.98	12.02	39.72	27.67	37.60	34.71
k, delay calibration	0.16	0.50	0.50	0.04	0.50	0.50	0.50	0.41	0.21	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	150.28	0.84	0.15	3.68	1.23	0.48	145.78	8.73	24.78	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

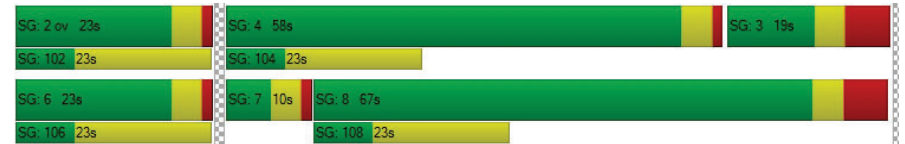
X, volume / capacity	1.31	0.35	0.07	0.52	0.41	0.17	1.22	0.79	0.89	0.24
d, Delay for Lane Group [s/veh]	195.03	10.37	7.93	51.94	15.21	12.50	185.51	36.40	62.38	34.91
Lane Group LOS	F	B	A	D	B	B	F	D	E	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	12.53	4.39	0.52	0.58	5.70	1.56	9.07	10.93	4.31	1.10
50th-Percentile Queue Length [ft/ln]	313.18	109.72	12.95	14.58	142.43	38.88	226.71	273.13	107.71	27.38
95th-Percentile Queue Length [veh/ln]	20.17	7.82	0.93	1.05	9.61	2.80	15.24	16.35	7.71	1.97
95th-Percentile Queue Length [ft/ln]	504.35	195.61	23.30	26.24	240.29	69.98	380.88	408.65	192.81	49.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	195.03	10.37	7.93	51.94	15.21	12.50	185.51	185.51	36.40	62.38	62.38	62.38	34.91
Movement LOS	F	B	A	D	B	B	F	F	D	E	E	E	C
d_A, Approach Delay [s/veh]	73.69			16.01			76.55			55.17			
Approach LOS	E			B			E			E			
d_I, Intersection Delay [s/veh]	57.25												
Intersection LOS	E												
Intersection V/C	0.747												

Sequence

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



Intersection Level Of Service Report

Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 13.2
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.334

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	440	260	290	520	150	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	440	260	290	520	150	160
Peak Hour Factor	0.9089	0.9089	0.8739	0.8739	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	121	72	83	149	42	45
Total Analysis Volume [veh/h]	484	286	332	595	169	180
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31		38		61	
Bicycle Volume [bicycles/h]	1		2		18	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	59	59	72	72	15	15	15
g / C, Green / Cycle	0.59	0.59	0.72	0.72	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.13	0.18	0.31	0.16	0.07	0.07	0.08
s, saturation flow rate [veh/h]	3618	1546	1061	3618	1695	1687	1435
c, Capacity [veh/h]	2136	913	812	2609	249	248	211
d1, Uniform Delay [s]	9.68	10.29	5.10	4.65	39.23	39.05	39.42
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.25	0.90	1.52	0.20	0.56	0.51	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

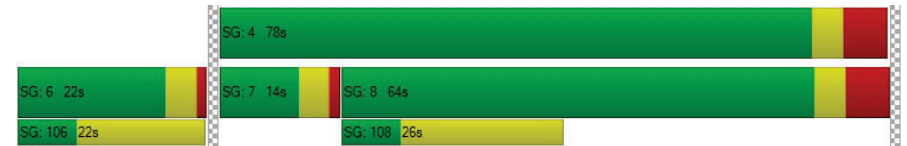
X, volume / capacity	0.23	0.31	0.41	0.23	0.49	0.47	0.53
d, Delay for Lane Group [s/veh]	9.92	11.18	6.63	4.86	39.79	39.55	40.18
Lane Group LOS	A	B	A	A	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.44	3.20	2.32	1.80	2.80	2.61	2.54
50th-Percentile Queue Length [ft/ln]	61.07	80.10	58.00	45.11	69.99	65.26	63.51
95th-Percentile Queue Length [veh/ln]	4.40	5.77	4.18	3.25	5.04	4.70	4.57
95th-Percentile Queue Length [ft/ln]	109.93	144.18	104.39	81.20	125.97	117.47	114.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.92	11.18	6.63	4.86	39.72	39.95
Movement LOS	A	B	A	A	D	D
d_A, Approach Delay [s/veh]	10.39		5.49		39.83	
Approach LOS	B		A		D	
d_I, Intersection Delay [s/veh]	13.19					
Intersection LOS	B					
Intersection V/C	0.334					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 7.8
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.302

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	770	90	90	570	30	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	770	90	90	570	30	60
Peak Hour Factor	0.9190	0.9190	0.9144	0.9144	0.7609	0.7609
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	209	24	25	156	10	20
Total Analysis Volume [veh/h]	838	98	98	623	39	79
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34		38		77	
Bicycle Volume [bicycles/h]	3		4		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	72	72	72	72	15
g / C, Green / Cycle	0.72	0.72	0.72	0.72	0.15
(v / s)_i Volume / Saturation Flow Rate	0.23	0.07	0.15	0.17	0.07
s, saturation flow rate [veh/h]	3618	1495	664	3618	1674
c, Capacity [veh/h]	2590	1071	472	2590	254
d1, Uniform Delay [s]	5.23	4.30	9.27	4.86	38.62
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.17	1.00	0.22	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.09	0.21	0.24	0.46
d, Delay for Lane Group [s/veh]	5.57	4.47	10.27	5.08	39.11
Lane Group LOS	A	A	B	A	D
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.84	0.57	1.07	1.96	2.63
50th-Percentile Queue Length [ft/ln]	71.06	14.35	26.71	48.95	65.68
95th-Percentile Queue Length [veh/ln]	5.12	1.03	1.92	3.52	4.73
95th-Percentile Queue Length [ft/ln]	127.90	25.83	48.07	88.11	118.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.57	4.47	10.27	5.08	39.11	39.11
Movement LOS	A	A	B	A	D	D
d_A, Approach Delay [s/veh]	5.45		5.78		39.11	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	7.82					
Intersection LOS	A					
Intersection V/C	0.302					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	9.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.325

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	780	170	90	470	80	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	170	90	470	80	70
Peak Hour Factor	0.9233	0.9233	0.9315	0.9315	0.7866	0.7866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	211	46	24	126	25	22
Total Analysis Volume [veh/h]	845	184	97	505	102	89
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	78		64		77	
Bicycle Volume [bicycles/h]	5		4		17	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	66	66	77	77	9	21
g / C, Green / Cycle	0.66	0.66	0.77	0.77	0.09	0.21
(v / s)_i Volume / Saturation Flow Rate	0.23	0.12	0.12	0.14	0.07	0.06
s, saturation flow rate [veh/h]	3618	1486	802	3618	1378	1424
c, Capacity [veh/h]	2388	981	659	2803	128	296
d1, Uniform Delay [s]	7.53	6.59	3.34	2.95	44.38	33.46
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	0.42	0.47	0.14	4.15	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

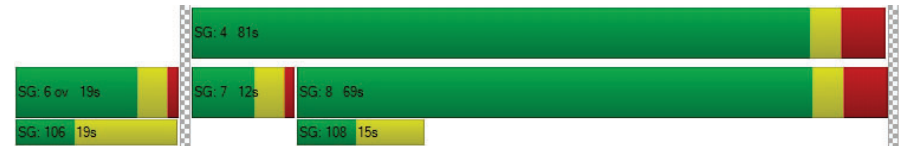
X, volume / capacity	0.35	0.19	0.15	0.18	0.79	0.30
d, Delay for Lane Group [s/veh]	7.94	7.01	3.81	3.09	48.53	33.67
Lane Group LOS	A	A	A	A	D	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.75	1.49	0.43	1.04	2.60	1.83
50th-Percentile Queue Length [ft/ln]	93.74	37.29	10.79	26.09	65.11	45.80
95th-Percentile Queue Length [veh/ln]	6.75	2.68	0.78	1.88	4.69	3.30
95th-Percentile Queue Length [ft/ln]	168.73	67.12	19.42	46.97	117.21	82.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.94	7.01	3.81	3.09	48.53	33.67
Movement LOS	A	A	A	A	D	C
d_A, Approach Delay [s/veh]	7.77		3.21		41.60	
Approach LOS	A		A		D	
d_l, Intersection Delay [s/veh]	9.81					
Intersection LOS	A					
Intersection V/C	0.325					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 25.6
Level Of Service: C
Volume to Capacity (v/c): 0.384

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration				T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
Base Volume Input [veh/h]	40	870	142	67	590	20	20	13	20	110	20	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	870	142	67	590	20	20	13	20	110	20	120
Peak Hour Factor	0.9547	0.9547	0.8613	0.9469	0.9024	0.9024	0.6667	0.5455	0.6667	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	228	41	18	163	6	7	6	7	32	6	35
Total Analysis Volume [veh/h]	42	911	165	71	654	22	30	24	30	129	24	141
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			17		
Bicycle Volume [bicycles/h]	20			23			24			47		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	41.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	51	0	0	39	27	17	0	39	12	25	17
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	65	65	57	57	6	14	14
g / C, Green / Cycle	0.54	0.54	0.47	0.47	0.05	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.05	0.25	0.18	0.18	0.04	0.08	0.10
s, saturation flow rate [veh/h]	876	3618	1900	1873	1707	1823	1449
c, Capacity [veh/h]	474	1968	901	888	87	210	167
d1, Uniform Delay [s]	13.70	16.68	20.19	20.26	56.06	51.32	52.08
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	0.79	1.19	1.24	3.66	1.83	4.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

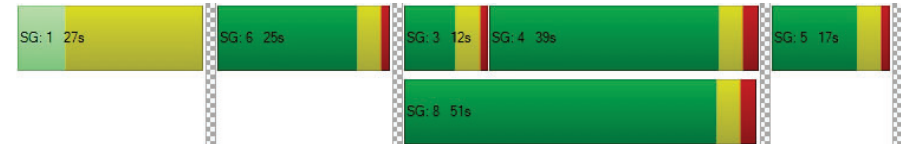
X, volume / capacity	0.09	0.46	0.38	0.38	0.69	0.73	0.85
d, Delay for Lane Group [s/veh]	13.73	17.46	21.39	21.50	59.72	53.15	56.54
Lane Group LOS	B	B	C	C	E	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.53	7.71	6.32	6.34	1.86	4.59	4.40
50th-Percentile Queue Length [ft/ln]	13.32	192.65	157.89	158.54	46.58	114.79	110.03
95th-Percentile Queue Length [veh/ln]	0.96	12.26	10.44	10.47	3.35	8.11	7.84
95th-Percentile Queue Length [ft/ln]	23.98	306.46	260.93	261.78	83.84	202.64	196.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.73	17.46	0.00	0.00	21.44	21.50	59.72	0.00	59.72	53.15	53.15	56.54
Movement LOS	B	B			C	C	E		E	D	D	E
d_A, Approach Delay [s/veh]	17.30		21.44			59.72		54.78				
Approach LOS	B		C			E		D				
d_I, Intersection Delay [s/veh]	25.55											
Intersection LOS	C											
Intersection V/C	0.384											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 25.8
 Level Of Service: C
 Volume to Capacity (v/c): 0.462

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	500	770	690	40	110	440
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	770	690	40	110	440
Peak Hour Factor	0.9091	0.9091	0.9306	0.9306	0.8533	0.8533
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	212	185	11	32	129
Total Analysis Volume [veh/h]	550	847	741	43	129	516
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		0		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	71	71	71	25	24
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	75	75	75	10	35
g / C, Green / Cycle	0.17	0.63	0.63	0.63	0.09	0.29
(v / s)_i Volume / Saturation Flow Rate	0.16	0.23	0.20	0.03	0.07	0.19
s, saturation flow rate [veh/h]	3514	3618	3618	1615	1810	2686
c, Capacity [veh/h]	597	2274	2274	1015	156	792
d1, Uniform Delay [s]	48.97	10.80	10.40	8.50	53.89	36.92
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.47	0.38	0.08	4.15	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

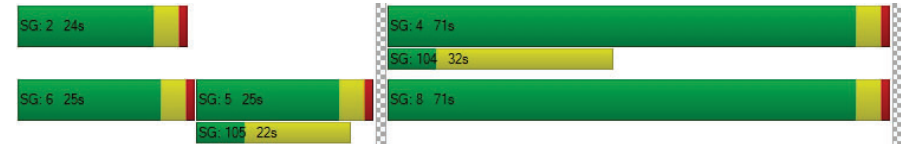
X, volume / capacity	0.92	0.37	0.33	0.04	0.83	0.65
d, Delay for Lane Group [s/veh]	51.59	11.27	10.78	8.58	58.04	37.26
Lane Group LOS	D	B	B	A	E	D
Critical Lane Group	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.29	5.40	4.54	0.44	4.19	7.05
50th-Percentile Queue Length [ft/ln]	207.35	134.90	113.57	11.03	104.87	176.26
95th-Percentile Queue Length [veh/ln]	13.02	9.21	8.04	0.79	7.55	11.41
95th-Percentile Queue Length [ft/ln]	325.43	230.14	200.95	19.86	188.77	285.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.59	11.27	10.78	8.58	58.04	37.26
Movement LOS	D	B	B	A	E	D
d_A, Approach Delay [s/veh]	27.14		10.66		41.41	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	25.83					
Intersection LOS	C					
Intersection V/C	0.462					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 21.0
Level Of Service: C
Volume to Capacity (v/c): 0.571

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	40	90	10	3	190	98	90	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	40	90	10	3	190	98	90	270
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.9268	0.9268	0.9268	1.0000	0.9489	0.9471	0.9471	0.9471
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	11	24	3	1	50	26	24	71
Total Analysis Volume [veh/h]	0	0	0	0	43	97	11	3	200	103	95	285
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	12				27				48			
Bicycle Volume [bicycles/h]	10				7				36			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0	0
Auxiliary Signal Groups	-	-	-	-	Lead	-	-	-	Lead	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0	0
Maximum Green [s]	0	0	0	0	15	30	30	0	7	0	30	0	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0
Split [s]	0	0	0	0	19	35	43	0	12	0	35	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	0	0	0	22	13	0	0	0	20	0	0
Rest in Walk	No												
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0	0.0
Minimum Recall	No												
Maximum Recall	No												
Pedestrian Recall	No												
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	31	31	31
g / C, Green / Cycle	0.21	0.21	0.21	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.03	0.14	0.05	0.19
s, saturation flow rate [veh/h]	1290	1900	1805	1470	1900	1516
c, Capacity [veh/h]	276	395	375	593	648	517
d1, Uniform Delay [s]	33.50	29.11	29.14	22.03	20.60	24.10
k, delay calibration	0.11	0.11	0.11	0.50	0.11	0.12
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.16	0.17	1.54	0.10	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.14	0.14	0.34	0.15	0.55
d, Delay for Lane Group [s/veh]	33.76	29.27	29.32	23.57	20.70	25.11
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.83	0.95	0.94	3.26	1.36	4.84
50th-Percentile Queue Length [ft/ln]	20.64	23.79	23.60	81.58	33.93	121.08
95th-Percentile Queue Length [veh/ln]	1.49	1.71	1.70	5.87	2.44	8.45
95th-Percentile Queue Length [ft/ln]	37.15	42.81	42.47	146.85	61.08	211.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	33.76	29.29	29.32	0.00	23.57	0.00	20.70	25.11
Movement LOS					C	C	C		C		C	C
d_A, Approach Delay [s/veh]	0.00				30.56				23.85			
Approach LOS	A				C				C			
d_I, Intersection Delay [s/veh]	21.04											
Intersection LOS	C											
Intersection V/C	0.571											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	30	1130	210	170	790	65	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	30	1130	210	170	790	65	20
Peak Hour Factor	1.0000	0.9525	0.9525	0.9525	0.9353	0.9353	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	297	55	45	211	17	5
Total Analysis Volume [veh/h]	1	31	1186	220	182	845	69	21
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	46				31			
Bicycle Volume [bicycles/h]	10				12			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	30	30	15	30	0	30
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	24	35	19	43	0	35
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	22	0	13	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			Yes		No	Yes		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	39	39	39	50	50	50
g / C, Green / Cycle	0.43	0.43	0.43	0.56	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.05	0.33	0.14	0.25	0.23	0.23
s, saturation flow rate [veh/h]	647	3618	1535	726	1900	1878
c, Capacity [veh/h]	256	1562	663	387	1058	1046
d1, Uniform Delay [s]	25.13	21.63	16.97	15.74	11.46	11.47
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	3.52	1.34	4.05	1.18	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

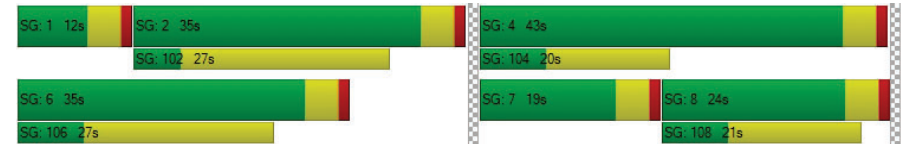
X, volume / capacity	0.12	0.76	0.33	0.47	0.41	0.41
d, Delay for Lane Group [s/veh]	26.10	25.15	18.31	19.80	12.64	12.67
Lane Group LOS	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.57	10.73	3.15	2.09	4.96	4.93
50th-Percentile Queue Length [ft/ln]	14.19	288.31	78.73	52.31	124.07	123.24
95th-Percentile Queue Length [veh/ln]	1.02	16.11	5.67	3.77	8.62	8.57
95th-Percentile Queue Length [ft/ln]	25.55	402.63	141.71	94.15	215.41	214.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	26.10	25.15	18.31	19.80	12.66	0.00	12.67
Movement LOS		C	C	B	B	B		B
d_A, Approach Delay [s/veh]	24.12			13.90				
Approach LOS	C			B				
d_I, Intersection Delay [s/veh]	21.04							
Intersection LOS	C							
Intersection V/C	0.571							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 76.3
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.607

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00		
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	1	0	0	0		
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	30	50	40	0	110	80	25	20	260	80	130	290	110		
Base Volume Input [veh/h]	0	30	50	40	0	110	80	25	20	260	80	130	290	110		
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Hourly Volume [veh/h]	0	30	50	40	0	110	80	25	20	260	80	130	290	110		
Peak Hour Factor	1.000	0.924	0.924	0.924	1.000	0.803	0.803	0.803	0.6628	0.6628	0.6628	0.9621	0.9621	0.9621		
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
Total 15-Minute Volume [veh/h]	0	8	14	11	0	34	25	8	8	98	30	34	75	29		
Total Analysis Volume [veh/h]	0	32	54	43	0	137	100	31	30	392	121	135	301	114		
Presence of On-Street Parking	No			No	No			No	No			No	No	No		
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pedestrian Volume [ped/h]	307				0				6				14			
Bicycle Volume [bicycles/h]	1				8				9				31			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	8	0	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups														
Lead / Lag	-	Lag	-	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	7	7	7	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	30	30	30	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	45	45	45	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	14	14	14	14	14	14
Rest in Walk														
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall			No				No		Yes			Yes		
Maximum Recall									No			No		
Pedestrian Recall			No				No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.06	0.32	0.03	0.28	0.15	0.11	0.12
s, saturation flow rate [veh/h]	1279	1751	825	987	1816	901	1900	1678
c, Capacity [veh/h]	73	272	174	443	858	286	898	793
d1, Uniform Delay [s]	50.02	37.80	47.31	20.07	19.40	34.21	15.70	15.79
k, delay calibration	0.04	0.04	0.44	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.54	0.30	266.35	0.29	3.07	5.50	0.63	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

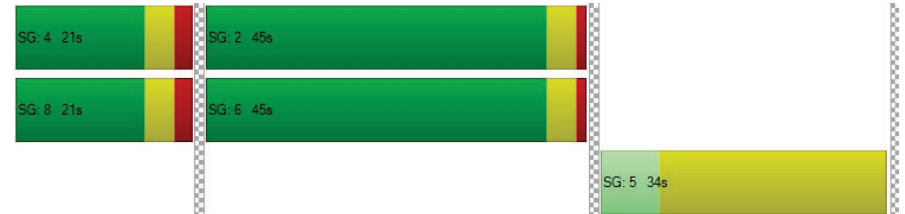
X, volume / capacity	0.44	0.36	1.54	0.07	0.60	0.47	0.24	0.25
d, Delay for Lane Group [s/veh]	51.55	38.10	313.66	20.36	22.46	39.71	16.33	16.55
Lane Group LOS	D	D	F	C	C	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.82	2.11	17.18	0.48	9.13	3.34	3.02	2.83
50th-Percentile Queue Length [ft/ln]	20.52	52.87	429.53	12.06	228.30	83.49	75.41	70.64
95th-Percentile Queue Length [veh/ln]	1.48	3.81	28.02	0.87	14.09	6.01	5.43	5.09
95th-Percentile Queue Length [ft/ln]	36.93	95.17	700.60	21.72	352.20	150.28	135.73	127.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.55	51.55	38.10	38.10	313.6	313.6	313.6	313.6	20.36	22.46	22.46	39.71	16.40	16.55
Movement LOS	D	D	D	D	F	F	F	F	C	C	C	D	B	B
d_A, Approach Delay [s/veh]	41.43				313.66				22.35			22.15		
Approach LOS	D				F				C			C		
d_I, Intersection Delay [s/veh]	76.33													
Intersection LOS	E													
Intersection V/C	0.607													

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 26.9
 Level Of Service: C
 Volume to Capacity (v/c): 0.279

Intersection Setup

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	0	40	160	40	0	20	50	50	0	40	80	90	0	30	80	60
Base Volume Input [veh/h]	0	40	160	40	0	20	50	50	0	40	80	90	0	30	80	60
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	40	160	40	0	20	50	50	0	40	80	90	0	30	80	60
Peak Hour Factor	1.000	0.828	0.828	0.828	1.000	0.834	0.834	0.834	1.000	0.885	0.885	0.885	1.000	0.872	0.872	0.872
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	12	48	12	0	6	15	15	0	11	23	25	0	9	23	17
Total Analysis Volume [veh/h]	0	48	193	48	0	24	60	60	0	45	90	102	0	34	92	69
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	257				0				18				7			
Bicycle Volume [bicycles/h]	11				5				23				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	0	0	0	4	4	0	2	2	2	0	0	6	0
Auxiliary Signal Groups																
Lead / Lag	-	Lag	-	-	-	-	-	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0
Maximum Green [s]	0	30	30	0	0	0	30	30	0	30	30	30	0	0	30	0
Amber [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	3.6	0.0
All red [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	35	35	0	0	0	35	35	0	38	38	38	0	0	38	0
Vehicle Extension [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0
Pedestrian Clearance [s]	0	13	13	0	0	0	13	13	0	16	16	16	0	0	16	0
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	2.6	2.6	2.6	0.0	0.0	2.6	0.0
Minimum Recall			Yes				Yes			No					No	
Maximum Recall										No					No	
Pedestrian Recall			No				No			No					No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	16	16	16	16	16	54	54
g / C, Green / Cycle	0.16	0.16	0.16	0.16	0.16	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.03	0.02	0.07	0.15	0.18
s, saturation flow rate [veh/h]	1292	1900	1541	1209	1716	1622	1100
c, Capacity [veh/h]	163	299	242	118	270	920	637
d1, Uniform Delay [s]	44.89	39.53	36.65	47.20	38.18	12.22	12.82
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.88	0.15	0.31	0.43	0.68	1.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.65	0.20	0.20	0.44	0.26	0.31
d, Delay for Lane Group [s/veh]	45.27	40.40	36.80	47.51	38.61	12.89	14.06
Lane Group LOS	D	D	D	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.15	4.43	1.02	0.59	2.65	2.82	2.56
50th-Percentile Queue Length [ft/ln]	28.74	110.86	25.40	14.71	66.29	70.50	63.97
95th-Percentile Queue Length [veh/ln]	2.07	7.89	1.83	1.06	4.77	5.08	4.61
95th-Percentile Queue Length [ft/ln]	51.73	197.20	45.71	26.48	119.33	126.89	115.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.27	45.27	40.40	36.80	47.51	47.51	38.61	38.61	12.89	12.89	12.89	12.89	14.06	14.06	14.06	14.06
Movement LOS	D	D	D	D	D	D	D	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	40.61				40.09				12.89				14.06			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	26.95															
Intersection LOS	C															
Intersection V/C	0.279															

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 36.4
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.641

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	30	140	20	20	110	40	40	200	30	70	140	120
Base Volume Input [veh/h]	30	140	20	20	110	40	40	200	30	70	140	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	140	20	20	110	40	40	200	30	70	140	120
Peak Hour Factor	0.8868	0.8868	0.8868	0.7663	0.7663	0.7663	0.9649	0.9649	0.9649	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	39	6	7	36	13	10	52	8	19	38	33
Total Analysis Volume [veh/h]	34	158	23	26	144	52	41	207	31	77	154	132
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	425			0			24			8		
Bicycle Volume [bicycles/h]	3			6			42			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	83.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	17	17	17	17	53	53	53	53
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.53	0.53	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.03	0.08	0.03	0.02	0.11	0.40	0.02	0.53	0.08
s, saturation flow rate [veh/h]	1206	1900	900	1248	1797	616	1567	435	1585
c, Capacity [veh/h]	127	324	153	162	306	367	826	277	836
d1, Uniform Delay [s]	46.82	37.52	35.30	43.93	38.61	20.00	11.39	30.10	12.18
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	0.42	0.17	0.17	0.83	9.63	0.08	24.50	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

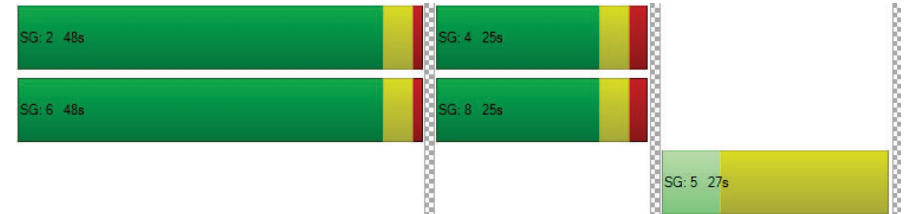
X, volume / capacity	0.27	0.49	0.15	0.16	0.64	0.68	0.04	0.83	0.16
d, Delay for Lane Group [s/veh]	47.24	37.94	35.47	44.10	39.45	29.63	11.48	54.60	12.59
Lane Group LOS	D	D	D	D	D	C	B	D	B
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.83	3.47	0.48	0.61	4.45	3.91	0.34	7.54	1.57
50th-Percentile Queue Length [ft/ln]	20.80	86.71	11.92	15.21	111.25	97.73	8.60	188.43	39.30
95th-Percentile Queue Length [veh/ln]	1.50	6.24	0.86	1.10	7.91	7.04	0.62	12.04	2.83
95th-Percentile Queue Length [ft/ln]	37.44	156.08	21.46	27.38	197.74	175.92	15.49	300.99	70.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.24	37.94	35.47	44.10	39.45	39.45	29.63	29.63	11.48	54.60	54.60	12.59
Movement LOS	D	D	D	D	D	D	C	C	B	D	D	B
d_A, Approach Delay [s/veh]	39.15			39.99			27.62			39.32		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	36.40											
Intersection LOS	D											
Intersection V/C	0.641											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.0
Level Of Service: C
Volume to Capacity (v/c): 0.345

Intersection Setup

Name	2nd St				2nd St				Broadway				Br			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Broadway				Br			
	0	0	300	180	0	60	190	10	0	100	140	80	0	120	240	70
Base Volume Input [veh/h]	0	0	300	180	0	60	190	10	0	100	140	80	0	120	240	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	300	180	0	60	190	10	0	100	140	80	0	120	240	70
Peak Hour Factor	1.000	0.863	0.863	0.863	1.000	0.856	0.856	0.856	1.000	0.889	0.889	0.889	1.000	0.776	0.776	0.776
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	0	87	52	0	18	55	3	0	28	39	22	0	39	77	23
Total Analysis Volume [veh/h]	0	0	347	208	0	70	222	12	0	112	157	90	0	155	309	90
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	466				0				17				14			
Bicycle Volume [bicycles/h]	14				37				53				22			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	80.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	2	8	2	0	6	4	6	0	4	2	4	0	8	6	8
Auxiliary Signal Groups	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	1.0	2.0	1.0	0.0	1.0	2.0	1.0	0.0	2.0	1.0	2.0	0.0	2.0	1.0	2.0
Split [s]	0	41	30	41	0	41	30	41	0	41	30	41	0	41	30	41
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	10	12	10	0	10	10	10	0	10	10	10	0	12	10	12
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.6	3.6	2.6	0.0	2.6	3.6	2.6	0.0	3.6	2.6	3.6	0.0	3.6	2.6	3.6
Minimum Recall			No				No				Yes				Yes	
Maximum Recall			No				No				No				No	
Pedestrian Recall			No				No				No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.00	0.18	0.13	0.07	0.12	0.10	0.14	0.13	0.16	0.06
s, saturation flow rate [veh/h]	1165	1900	1548	1050	1878	1087	1756	1151	1900	1552
c, Capacity [veh/h]	210	464	379	132	459	397	760	436	823	672
d1, Uniform Delay [s]	0.00	34.92	32.97	47.54	32.60	27.43	18.71	27.02	19.20	17.06
k, delay calibration	0.04	0.08	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	1.81	0.46	1.22	0.33	1.78	1.13	2.26	1.31	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

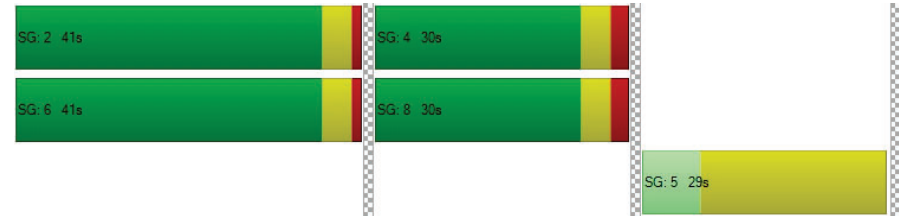
X, volume / capacity	0.00	0.75	0.55	0.53	0.51	0.28	0.32	0.36	0.38	0.13
d, Delay for Lane Group [s/veh]	0.00	36.72	33.43	48.76	32.93	29.20	19.84	29.28	20.51	17.48
Lane Group LOS	A	D	C	D	C	C	B	C	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.00	7.82	4.35	1.77	4.82	2.24	3.87	3.12	4.96	1.28
50th-Percentile Queue Length [ft/ln]	0.00	195.62	108.64	44.29	120.55	55.96	96.71	77.91	123.96	32.09
95th-Percentile Queue Length [veh/ln]	0.00	12.41	7.76	3.19	8.42	4.03	6.96	5.61	8.61	2.31
95th-Percentile Queue Length [ft/ln]	0.00	310.31	194.11	79.72	210.58	100.73	174.08	140.23	215.25	57.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	36.72	33.43	48.76	48.76	32.93	32.93	29.20	29.20	19.84	19.84	29.28	29.28	20.51	17.48
Movement LOS	A	A	D	C	D	D	C	C	C	C	B	B	C	C	C	B
d_A, Approach Delay [s/veh]	35.49			36.58			22.76			22.47						
Approach LOS	D			D			C			C						
d_I, Intersection Delay [s/veh]	29.03															
Intersection LOS	C															
Intersection V/C	0.345															

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 38.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.371

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	10	370	0	29	190	30	66	90	0	50	210	170
Base Volume Input [veh/h]	10	370	0	29	190	30	66	90	0	50	210	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	370	0	29	190	30	66	90	0	50	210	170
Peak Hour Factor	0.8824	0.8824	1.0000	0.9439	0.9737	0.9737	0.8321	0.8321	1.0000	0.9017	0.9017	0.9017
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	105	0	8	49	8	20	27	0	14	58	47
Total Analysis Volume [veh/h]	11	419	0	31	195	31	79	108	0	55	233	189
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	295			0			8			32		
Bicycle Volume [bicycles/h]	6			27			58			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	29	62	62
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.01	0.22	0.10	0.02	0.14	0.15
s, saturation flow rate [veh/h]	1183	1863	1863	1555	1880	1472
c, Capacity [veh/h]	217	445	445	371	972	761
d1, Uniform Delay [s]	45.51	44.80	38.78	35.43	16.24	16.38
k, delay calibration	0.04	0.23	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.04	18.09	0.25	0.04	0.68	0.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.94	0.44	0.08	0.27	0.28
d, Delay for Lane Group [s/veh]	45.55	62.89	39.04	35.46	16.92	17.31
Lane Group LOS	D	E	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.29	14.38	4.87	0.71	4.27	3.58
50th-Percentile Queue Length [ft/ln]	7.27	359.42	121.84	17.67	106.67	89.60
95th-Percentile Queue Length [veh/ln]	0.52	20.60	8.49	1.27	7.65	6.45
95th-Percentile Queue Length [ft/ln]	13.09	514.88	212.36	31.81	191.36	161.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.55	62.89	0.00	0.00	39.04	35.46	0.00	0.00	0.00	16.92	16.97	17.31
Movement LOS	D	E			D	D				B	B	B
d_A, Approach Delay [s/veh]	62.45		38.55		0.00		17.10					
Approach LOS	E		D		A		B					
d_I, Intersection Delay [s/veh]	38.59											
Intersection LOS	D											
Intersection V/C	0.371											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 24.7
Level Of Service: C
Volume to Capacity (v/c): 0.496

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	110	440	180	70	110	30	110	330	20	170	380	180
Base Volume Input [veh/h]	110	440	180	70	110	30	110	330	20	170	380	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	440	180	70	110	30	110	330	20	170	380	180
Peak Hour Factor	0.9461	0.9461	0.9461	0.8385	0.8385	0.8385	0.9433	0.9433	0.9433	0.9598	0.9598	0.9598
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	116	48	21	33	9	29	87	5	44	99	47
Total Analysis Volume [veh/h]	116	465	190	83	131	36	117	350	21	177	396	188
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	42	42	42	51	51	51	30	17	17	30	20	20
g / C, Green / Cycle	0.46	0.46	0.46	0.56	0.56	0.56	0.34	0.19	0.19	0.34	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.09	0.24	0.12	0.08	0.07	0.02	0.11	0.10	0.10	0.13	0.16	0.18
s, saturation flow rate [veh/h]	1264	1900	1549	1063	1900	1570	1043	1900	1808	1312	1900	1548
c, Capacity [veh/h]	589	876	714	545	1067	881	409	364	346	471	418	341
d1, Uniform Delay [s]	17.70	17.31	14.90	10.71	9.31	8.87	22.71	32.65	32.78	22.42	32.70	33.35
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.22	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	2.30	0.91	0.59	0.24	0.09	0.14	0.42	0.47	0.99	0.96	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

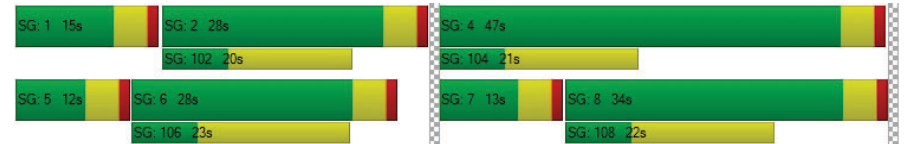
X, volume / capacity	0.20	0.53	0.27	0.15	0.12	0.04	0.29	0.51	0.53	0.38	0.74	0.81
d, Delay for Lane Group [s/veh]	18.45	19.61	15.81	11.31	9.54	8.95	22.85	33.07	33.25	23.41	33.66	35.13
Lane Group LOS	B	B	B	B	A	A	C	C	C	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.63	6.93	2.42	0.77	1.17	0.31	1.71	3.59	3.56	2.78	6.14	5.68
50th-Percentile Queue Length [ft/ln]	40.78	173.23	60.53	19.30	29.35	7.76	42.63	89.79	88.88	69.46	153.42	142.09
95th-Percentile Queue Length [veh/ln]	2.94	11.25	4.36	1.39	2.11	0.56	3.07	6.46	6.40	5.00	10.20	9.59
95th-Percentile Queue Length [ft/ln]	73.41	281.15	108.96	34.74	52.82	13.97	76.73	161.62	159.98	125.03	254.99	239.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.45	19.61	15.81	11.31	9.54	8.95	22.85	33.16	33.25	23.41	33.98	35.13
Movement LOS	B	B	B	B	A	A	C	C	C	C	C	D
d_A, Approach Delay [s/veh]	18.50			10.04			30.69			31.81		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	24.65											
Intersection LOS	C											
Intersection V/C	0.496											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	41.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.526

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	50	210	110	70	290	10	20	480	80	90	530	100
Base Volume Input [veh/h]	50	210	110	70	290	10	20	480	80	90	530	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	210	110	70	290	10	20	480	80	90	530	100
Peak Hour Factor	0.7703	0.7703	0.7703	0.9300	0.9300	0.9300	0.9229	0.9229	0.9229	0.9545	0.9545	0.9545
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	68	36	19	78	3	5	130	22	24	139	26
Total Analysis Volume [veh/h]	65	273	143	75	312	11	22	520	87	94	555	105
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	363			0			4			8		
Bicycle Volume [bicycles/h]	9			5			7			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.06	0.14	0.09	0.07	0.16	0.01	0.03	0.33	0.09	0.18	0.18
s, saturation flow rate [veh/h]	1084	1900	1579	1124	1900	1586	787	1848	1031	1900	1778
c, Capacity [veh/h]	88	368	306	115	368	308	219	613	295	844	790
d1, Uniform Delay [s]	49.95	38.03	35.81	49.04	38.97	32.80	34.12	33.33	22.29	18.83	18.88
k, delay calibration	0.04	0.04	0.04	0.04	0.11	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.54	1.20	0.41	2.35	5.48	0.02	0.92	33.95	0.23	1.42	1.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

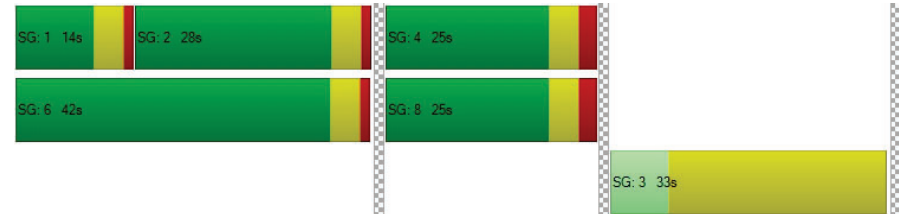
X, volume / capacity	0.74	0.74	0.47	0.65	0.85	0.04	0.10	0.99	0.32	0.40	0.41
d, Delay for Lane Group [s/veh]	54.49	39.24	36.23	51.39	44.45	32.81	35.04	67.27	22.52	20.25	20.43
Lane Group LOS	D	D	D	D	D	C	D	E	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.72	6.28	3.07	1.93	7.77	0.22	0.50	19.96	1.27	5.52	5.27
50th-Percentile Queue Length [ft/ln]	42.91	156.96	76.78	48.19	194.22	5.38	12.56	498.93	31.64	137.94	131.74
95th-Percentile Queue Length [veh/ln]	3.09	10.39	5.53	3.47	12.34	0.39	0.90	27.28	2.28	9.37	9.03
95th-Percentile Queue Length [ft/ln]	77.23	259.70	138.20	86.74	308.50	9.69	22.60	682.09	56.95	234.25	225.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.49	39.24	36.23	51.39	44.45	32.81	35.04	67.27	67.27	22.52	20.32	20.43
Movement LOS	D	D	D	D	D	C	D	E	E	C	C	C
d_A, Approach Delay [s/veh]	40.40			45.44			66.14			20.61		
Approach LOS	D			D			E			C		
d_I, Intersection Delay [s/veh]	41.85											
Intersection LOS	D											
Intersection V/C	0.526											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 28.2
Level Of Service: C
Volume to Capacity (v/c): 0.472

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	40	430	70	10	390	10	10	100	40	70	160	50
Base Volume Input [veh/h]	40	430	70	10	390	10	10	100	40	70	160	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	430	70	10	390	10	10	100	40	70	160	50
Peak Hour Factor	0.8912	0.8912	0.8912	0.9148	0.9148	0.9148	0.8274	0.8274	0.8274	0.8393	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	121	20	3	107	3	3	30	12	21	48	15
Total Analysis Volume [veh/h]	45	483	79	11	426	11	12	121	48	83	191	60
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	276			0			17			7		
Bicycle Volume [bicycles/h]	20			10			12			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	34.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	40	40	40	40	0	0	30	0	30	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	44	44	44	44	44	44	24
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.44	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.25	0.05	0.01	0.12	0.12	0.10
s, saturation flow rate [veh/h]	967	1900	1556	927	1900	1880	1746
c, Capacity [veh/h]	408	841	689	286	841	832	448
d1, Uniform Delay [s]	22.29	20.82	16.36	29.96	17.56	17.57	32.55
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.54	2.84	0.34	0.25	0.75	0.77	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

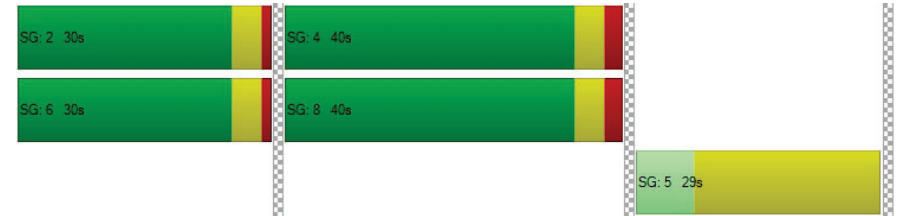
X, volume / capacity	0.11	0.57	0.11	0.04	0.26	0.26	0.40
d, Delay for Lane Group [s/veh]	22.84	23.67	16.70	30.21	18.31	18.33	32.76
Lane Group LOS	C	C	B	C	B	B	C
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.77	8.68	1.10	0.22	3.24	3.23	3.72
50th-Percentile Queue Length [ft/ln]	19.25	217.04	27.38	5.59	81.08	80.66	93.01
95th-Percentile Queue Length [veh/ln]	1.39	13.51	1.97	0.40	5.84	5.81	6.70
95th-Percentile Queue Length [ft/ln]	34.66	337.85	49.28	10.05	145.94	145.19	167.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	22.84	23.67	16.70	30.21	18.32	18.33	32.76	32.76	32.76	48.66	48.66	48.66
Movement LOS	C	C	B	C	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	22.70			18.61			32.76			48.66		
Approach LOS	C			B			C			D		
d_I, Intersection Delay [s/veh]	28.22											
Intersection LOS	C											
Intersection V/C	0.472											

Sequence

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



Intersection Level Of Service Report
Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 24.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.481

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	50	580	50	50	390	50	0	200	50	0	240	50
Base Volume Input [veh/h]	50	580	50	50	390	50	0	200	50	0	240	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	580	50	50	390	50	0	200	50	0	240	50
Peak Hour Factor	0.8402	0.8402	0.8402	0.9000	0.9000	0.9000	1.0000	0.8977	0.8977	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	173	15	14	108	14	0	56	14	0	63	13
Total Analysis Volume [veh/h]	60	690	60	56	433	56	0	223	56	0	253	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	398			0			16			7		
Bicycle Volume [bicycles/h]	13			9			11			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	56	56	56	56	56	56	14	14	14	14
g / C, Green / Cycle	0.56	0.56	0.56	0.56	0.56	0.56	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.07	0.36	0.04	0.07	0.13	0.13	0.12	0.04	0.08	0.09
s, saturation flow rate [veh/h]	922	1900	1587	765	1900	1817	1900	1567	1900	1773
c, Capacity [veh/h]	501	1064	889	285	1064	1018	261	215	261	243
d1, Uniform Delay [s]	15.25	15.19	10.05	28.11	11.13	11.15	42.15	38.58	40.46	40.72
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	3.06	0.15	1.54	0.51	0.55	3.11	0.24	0.78	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.65	0.07	0.20	0.23	0.24	0.85	0.26	0.59	0.63
d, Delay for Lane Group [s/veh]	15.73	18.25	10.20	29.65	11.65	11.70	45.26	38.82	41.24	41.71
Lane Group LOS	B	B	B	C	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.82	10.76	0.60	1.14	2.75	2.68	5.55	1.24	3.56	3.60
50th-Percentile Queue Length [ft/ln]	20.48	288.92	15.08	28.61	68.79	66.88	138.80	30.96	89.12	89.94
95th-Percentile Queue Length [veh/ln]	1.47	16.14	1.09	2.06	4.95	4.82	9.42	2.23	6.42	6.48
95th-Percentile Queue Length [ft/ln]	36.86	403.39	27.14	51.51	123.82	120.38	235.41	55.73	160.42	161.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.73	18.25	10.20	29.65	11.67	11.70	0.00	45.26	38.82	0.00	41.43	41.71
Movement LOS	B	B	B	C	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	17.47			13.52			43.97			41.48		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	23.96											
Intersection LOS	C											
Intersection V/C	0.481											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 39.2
Level Of Service: D
Volume to Capacity (v/c): 0.539

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
Base Volume Input [veh/h]	100	620	210	30	350	40	0	240	40	30	290	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	620	210	30	350	40	0	240	40	30	290	70
Peak Hour Factor	0.9144	0.9144	0.9144	0.9709	0.9709	0.9709	1.0000	0.9118	0.9118	0.8866	0.8866	0.8866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	170	57	8	90	10	0	66	11	8	82	20
Total Analysis Volume [veh/h]	109	678	230	31	360	41	0	263	44	34	327	79
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	516			0			19			11		
Bicycle Volume [bicycles/h]	29			44			5			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	9	51	51	60	46	46	19	32	28	28	28
g / C, Green / Cycle	0.07	0.42	0.42	0.50	0.39	0.39	0.15	0.27	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.06	0.36	0.15	0.03	0.11	0.11	0.14	0.03	0.03	0.17	0.05
s, saturation flow rate [veh/h]	1810	1900	1571	898	1900	1816	1900	1589	1313	1900	1591
c, Capacity [veh/h]	136	802	663	285	732	700	294	426	244	443	371
d1, Uniform Delay [s]	54.67	31.16	23.48	22.05	25.40	25.46	49.78	33.08	37.11	42.65	37.16
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.05	0.04	0.04	0.06	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.17	10.62	1.43	0.77	0.94	1.01	4.63	0.04	0.10	1.26	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.85	0.35	0.11	0.28	0.28	0.89	0.10	0.14	0.74	0.21
d, Delay for Lane Group [s/veh]	58.84	41.78	24.91	22.82	26.34	26.47	54.41	33.12	37.20	43.91	37.26
Lane Group LOS	E	D	C	C	C	C	D	C	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.37	19.38	4.61	0.49	4.14	4.06	8.10	0.98	0.79	9.03	1.88
50th-Percentile Queue Length [ft/ln]	84.35	484.38	115.28	12.25	103.48	101.42	202.57	24.47	19.63	225.79	46.98
95th-Percentile Queue Length [veh/ln]	6.07	26.59	8.13	0.88	7.45	7.30	12.77	1.76	1.41	13.96	3.38
95th-Percentile Queue Length [ft/ln]	151.84	664.85	203.33	22.04	186.27	182.56	319.27	44.05	35.34	349.00	84.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.84	41.78	24.91	22.82	26.40	26.47	0.00	54.41	33.12	37.20	43.91	37.26
Movement LOS	E	D	C	C	C	C		D	C	D	D	D
d_A, Approach Delay [s/veh]	39.80			26.15			51.36			42.20		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	39.21											
Intersection LOS	D											
Intersection V/C	0.539											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 19.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.407

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	310	980	0	0	430	30	181	0	84	120	130	40
Base Volume Input [veh/h]	310	980	0	0	430	30	181	0	84	120	130	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	310	980	0	0	430	30	181	0	84	120	130	40
Peak Hour Factor	0.8612	0.8612	1.0000	1.0000	0.9000	0.9000	0.8717	1.0000	0.8717	0.9130	0.9130	0.9130
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	284	0	0	119	8	52	0	24	33	36	11
Total Analysis Volume [veh/h]	360	1138	0	0	478	33	208	0	96	131	142	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	722			0			156			3		
Bicycle Volume [bicycles/h]	7			56			7			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8	
Auxiliary Signal Groups									3				
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7	
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40	
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6	
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0	
Split [s]	22	71	0	0	49	20	29	0	22	0	20	71	
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7	
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17	
Rest in Walk													
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6	
Minimum Recall	No	Yes			Yes						No		
Maximum Recall	No	No			No						No		
Pedestrian Recall	No	No			No						No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	78	78	60	60	13	13
g / C, Green / Cycle	0.65	0.65	0.50	0.50	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.33	0.31	0.13	0.14	0.09	0.09
s, saturation flow rate [veh/h]	1086	3618	1900	1847	1828	1633
c, Capacity [veh/h]	715	2339	950	923	201	179
d1, Uniform Delay [s]	10.07	10.93	17.34	17.42	52.31	52.38
k, delay calibration	0.31	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.58	0.73	0.70	0.74	3.34	3.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

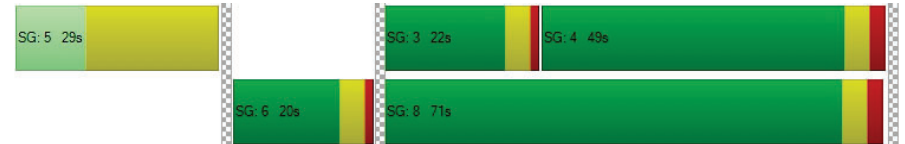
X, volume / capacity	0.50	0.49	0.27	0.28	0.83	0.84
d, Delay for Lane Group [s/veh]	11.66	11.66	18.04	18.17	55.65	56.34
Lane Group LOS	B	B	B	B	E	E
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.31	7.61	4.18	4.20	5.14	4.68
50th-Percentile Queue Length [ft/ln]	107.73	190.35	104.50	105.12	128.39	116.94
95th-Percentile Queue Length [veh/ln]	7.71	12.14	7.52	7.57	8.85	8.22
95th-Percentile Queue Length [ft/ln]	192.84	303.49	188.10	189.20	221.30	205.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.66	11.66	0.00	0.00	18.10	18.17	0.00	0.00	0.00	55.65	56.17	56.34
Movement LOS	B	B			B	B				E	E	E
d_A, Approach Delay [s/veh]	11.66		18.10			0.00		55.98				
Approach LOS	B		B			A		E				
d_I, Intersection Delay [s/veh]	19.11											
Intersection LOS	B											
Intersection V/C	0.407											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 35.9
Level Of Service: D
Volume to Capacity (v/c): 0.718

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		890	530
Base Volume Input [veh/h]	500	0	0	650	890	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	0	0	650	890	530
Peak Hour Factor	0.9052	1.0000	1.0000	0.8323	0.9608	0.9608
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	0	0	195	232	138
Total Analysis Volume [veh/h]	552	0	0	781	926	552
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	42.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	45	0	0	45	45	45
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	40
g / C, Green / Cycle	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.37	0.50
s, saturation flow rate [veh/h]	3618	3618	2500	1100
c, Capacity [veh/h]	1628	1628	1119	493
d1, Uniform Delay [s]	16.05	17.34	21.77	24.82
k, delay calibration	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	1.02	0.61	77.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

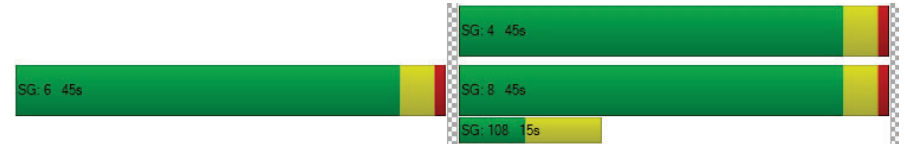
X, volume / capacity	0.34	0.48	0.83	1.12
d, Delay for Lane Group [s/veh]	16.61	18.36	22.38	102.81
Lane Group LOS	B	B	C	F
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.67	5.64	7.27	19.38
50th-Percentile Queue Length [ft/ln]	91.72	141.10	181.85	484.39
95th-Percentile Queue Length [veh/ln]	6.60	9.54	11.70	28.75
95th-Percentile Queue Length [ft/ln]	165.10	238.50	292.43	718.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.61	0.00	0.00	18.36	22.38	102.81
Movement LOS	B			B	C	F
d_A, Approach Delay [s/veh]	16.61			18.36		52.42
Approach LOS	B			B		D
d_I, Intersection Delay [s/veh]				35.93		
Intersection LOS				D		
Intersection V/C				0.718		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 56.7
Level Of Service: E
Volume to Capacity (v/c): 0.604

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	40	460	500	360	770	230	40	440	30	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	460	500	360	770	230	40	440	30	0	0	0
Peak Hour Factor	0.8933	0.8933	0.8933	0.9143	0.9143	0.9143	0.7752	0.7752	0.7752	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	129	140	98	211	63	13	142	10	0	0	0
Total Analysis Volume [veh/h]	45	515	560	394	842	252	52	568	39	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			109			47		
Bicycle Volume [bicycles/h]	0			2			13			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	12	36	36	25	49	49	29	29	29	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No		No	Yes			No				
Maximum Recall	No	Yes		No	No			No				
Pedestrian Recall	No	No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	25	25	38	59	59	14	14	14
g / C, Green / Cycle	0.04	0.28	0.28	0.42	0.66	0.66	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.02	0.27	0.37	0.11	0.30	0.32	0.12	0.12	0.13
s, saturation flow rate [veh/h]	1810	1900	1533	3514	1900	1656	1879	1729	1663
c, Capacity [veh/h]	69	528	426	1467	1248	1088	284	262	252
d1, Uniform Delay [s]	42.67	32.19	32.50	17.20	7.53	7.80	37.02	37.00	37.09
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.74	33.61	157.58	0.04	1.18	1.57	2.30	2.45	2.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.98	1.31	0.27	0.45	0.49	0.82	0.82	0.83
d, Delay for Lane Group [s/veh]	46.41	65.80	190.07	17.23	8.71	9.37	39.32	39.45	39.87
Lane Group LOS	D	E	F	B	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.05	15.65	27.59	2.60	4.95	4.91	5.03	4.62	4.55
50th-Percentile Queue Length [ft/ln]	26.22	391.13	689.69	64.93	123.75	122.75	125.69	115.50	113.67
95th-Percentile Queue Length [veh/ln]	1.89	22.13	41.91	4.67	8.60	8.54	8.70	8.14	8.04
95th-Percentile Queue Length [ft/ln]	47.20	553.31	1047.73	116.87	214.97	213.60	217.62	203.62	201.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.41	65.80	190.07	17.23	8.93	9.37	39.32	39.53	39.87	0.00	0.00	0.00
Movement LOS	D	E	F	B	A	A	D	D	D			
d_A, Approach Delay [s/veh]	127.16			11.20			39.54			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	56.67											
Intersection LOS	E											
Intersection V/C	0.604											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.5
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.285

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	120	120	60	40	90	20	10	515	20	110	600	40
Base Volume Input [veh/h]	120	120	60	40	90	20	10	515	20	110	600	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	120	60	40	90	20	10	515	20	110	600	40
Peak Hour Factor	0.9659	0.9659	0.9659	0.8023	0.8023	0.8023	0.9311	0.9311	0.9311	0.9371	0.9371	0.9371
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	31	16	12	28	6	3	138	5	29	160	11
Total Analysis Volume [veh/h]	124	124	62	50	112	25	11	553	21	117	640	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			88			39			23		
Bicycle Volume [bicycles/h]	7			9			2			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	22	64	64	64	64	64	64
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.04	0.04	0.08	0.01	0.15	0.01	0.14	0.18	0.18
s, saturation flow rate [veh/h]	1228	1900	1536	1260	1812	762	3618	1538	861	1900	1832
c, Capacity [veh/h]	241	425	344	257	405	488	2330	991	555	1224	1180
d1, Uniform Delay [s]	41.36	32.21	31.38	37.89	32.57	10.47	7.47	6.41	11.12	7.73	7.76
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	0.14	0.09	0.14	0.18	0.09	0.24	0.04	0.86	0.58	0.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

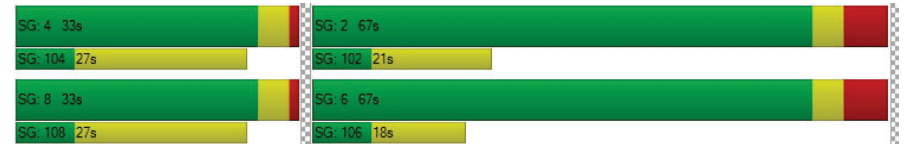
X, volume / capacity	0.52	0.29	0.18	0.19	0.34	0.02	0.24	0.02	0.21	0.28	0.29
d, Delay for Lane Group [s/veh]	42.00	32.35	31.47	38.03	32.75	10.55	7.71	6.45	11.98	8.31	8.37
Lane Group LOS	D	C	C	D	C	B	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.92	2.46	1.20	1.08	2.75	0.12	2.36	0.16	1.39	3.15	3.10
50th-Percentile Queue Length [ft/ln]	72.95	61.59	30.02	27.04	68.87	3.00	59.00	3.99	34.76	78.64	77.42
95th-Percentile Queue Length [veh/ln]	5.25	4.43	2.16	1.95	4.96	0.22	4.25	0.29	2.50	5.66	5.57
95th-Percentile Queue Length [ft/ln]	131.31	110.87	54.03	48.67	123.96	5.41	106.21	7.19	62.57	141.55	139.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.00	32.35	31.47	38.03	32.75	32.75	10.55	7.71	6.45	11.98	8.34	8.37
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	36.03			34.16			7.72			8.87		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	15.50											
Intersection LOS	B											
Intersection V/C	0.285											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 18.7
Level Of Service: B
Volume to Capacity (v/c): 0.231

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	60	240	60	30	120	30	20	130	40	20	120	30
Base Volume Input [veh/h]	60	240	60	30	120	30	20	130	40	20	120	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	240	60	30	120	30	20	130	40	20	120	30
Peak Hour Factor	0.8947	0.8947	0.8947	0.8571	0.8571	0.8571	0.8100	0.8100	0.8100	0.8464	0.8464	0.8464
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	67	17	9	35	9	6	40	12	6	35	9
Total Analysis Volume [veh/h]	67	268	67	35	140	35	25	160	49	24	142	35
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	30			86			30			19		
Bicycle Volume [bicycles/h]	27			10			3			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	14	16	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	71	71	71	71	71	20	20
g / C, Green / Cycle	0.71	0.71	0.71	0.71	0.71	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.09	0.03	0.10	0.13	0.12
s, saturation flow rate [veh/h]	1216	1900	1733	1056	1815	1745	1703
c, Capacity [veh/h]	860	1346	1228	757	1286	388	380
d1, Uniform Delay [s]	6.55	4.66	4.68	6.38	4.69	36.76	36.04
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.20	0.23	0.12	0.22	1.51	1.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

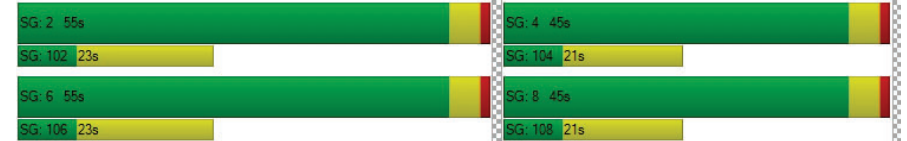
X, volume / capacity	0.08	0.13	0.13	0.05	0.14	0.60	0.53
d, Delay for Lane Group [s/veh]	6.73	4.86	4.91	6.49	4.91	38.27	37.19
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.51	1.01	0.98	0.26	1.04	5.30	4.45
50th-Percentile Queue Length [ft/ln]	12.87	25.28	24.42	6.62	26.08	132.61	111.25
95th-Percentile Queue Length [veh/ln]	0.93	1.82	1.76	0.48	1.88	9.08	7.91
95th-Percentile Queue Length [ft/ln]	23.16	45.50	43.95	11.91	46.95	227.04	197.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.73	4.88	4.91	6.49	4.91	4.91	38.27	38.27	38.27	37.19	37.19	37.19
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.19			5.18			38.27			37.19		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.72											
Intersection LOS	B											
Intersection V/C	0.231											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.268

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	60	380	70	20	80	20	40	230	10	0	240	110
Base Volume Input [veh/h]	60	380	70	20	80	20	40	230	10	0	240	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	380	70	20	80	20	40	230	10	0	240	110
Peak Hour Factor	0.9555	0.9555	0.9555	0.8468	0.8468	0.8468	0.9094	0.9094	0.9094	0.9331	0.9331	0.9331
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	99	18	6	24	6	11	63	3	0	64	29
Total Analysis Volume [veh/h]	63	398	73	24	94	24	44	253	11	0	257	118
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	152			133			81			50		
Bicycle Volume [bicycles/h]	10			10			4			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	19	19	19	19	19	68	68	68	68	68	68
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.68	0.68	0.68	0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.03	0.07	0.04	0.07	0.07	0.00	0.14	0.08
s, saturation flow rate [veh/h]	1190	1900	1732	914	1765	1113	1900	1857	1133	1900	1499
c, Capacity [veh/h]	204	364	332	113	339	749	1285	1255	790	1285	1013
d1, Uniform Delay [s]	41.73	37.38	37.66	46.88	34.99	7.99	5.64	5.64	0.00	6.06	5.69
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.32	0.77	0.98	0.35	0.23	0.15	0.16	0.17	0.00	0.35	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

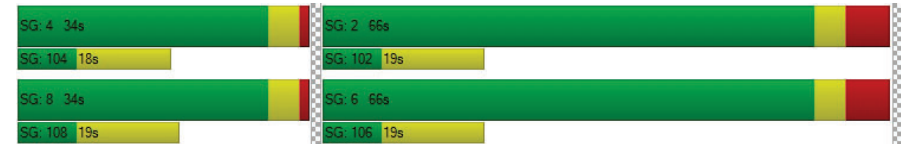
X, volume / capacity	0.31	0.66	0.69	0.21	0.35	0.06	0.10	0.10	0.00	0.20	0.12
d, Delay for Lane Group [s/veh]	42.05	38.15	38.63	47.23	35.22	8.14	5.80	5.81	0.00	6.41	5.92
Lane Group LOS	D	D	D	D	D	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.45	5.40	5.22	0.59	2.46	0.40	0.93	0.93	0.00	1.95	0.85
50th-Percentile Queue Length [ft/ln]	36.32	135.02	130.59	14.70	61.62	9.96	23.25	23.13	0.00	48.63	21.26
95th-Percentile Queue Length [veh/ln]	2.62	9.21	8.97	1.06	4.44	0.72	1.67	1.67	0.00	3.50	1.53
95th-Percentile Queue Length [ft/ln]	65.38	230.31	224.30	26.46	110.91	17.93	41.85	41.63	0.00	87.54	38.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.05	38.34	38.63	47.23	35.22	35.22	8.14	5.80	5.81	0.00	6.41	5.92
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	38.82		37.25			6.14		6.26				
Approach LOS	D		D			A		A				
d_I, Intersection Delay [s/veh]	22.26											
Intersection LOS	C											
Intersection V/C	0.268											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.4
Level Of Service: C
Volume to Capacity (v/c): 0.350

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	90	510	70	30	50	10	50	230	20	20	270	50
Base Volume Input [veh/h]	90	510	70	30	50	10	50	230	20	20	270	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	510	70	30	50	10	50	230	20	20	270	50
Peak Hour Factor	0.8505	0.8505	0.8505	0.8750	0.8750	0.8750	0.9438	0.9438	0.9438	0.8844	0.8844	0.8844
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	150	21	9	14	3	13	61	5	6	76	14
Total Analysis Volume [veh/h]	106	600	82	34	57	11	53	244	21	23	305	57
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	89			102			37			54		
Bicycle Volume [bicycles/h]	34			64			3			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	25	66	66	66	66	66
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.66	0.66	0.66	0.66	0.66
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.19	0.04	0.04	0.05	0.14	0.02	0.16	0.04
s, saturation flow rate [veh/h]	1313	1900	1766	771	1807	1074	1864	1114	1900	1519
c, Capacity [veh/h]	335	481	447	114	457	687	1221	720	1244	995
d1, Uniform Delay [s]	34.75	34.15	34.40	46.77	28.98	9.59	6.94	8.94	7.09	6.19
k, delay calibration	0.04	0.08	0.09	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	1.47	2.15	0.54	0.06	0.22	0.41	0.08	0.47	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.72	0.75	0.30	0.15	0.08	0.22	0.03	0.25	0.06
d, Delay for Lane Group [s/veh]	34.95	35.61	36.55	47.31	29.04	9.81	7.35	9.02	7.56	6.30
Lane Group LOS	C	D	D	D	C	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.22	7.72	7.54	0.84	1.25	0.53	2.13	0.22	2.51	0.41
50th-Percentile Queue Length [ft/ln]	55.56	192.91	188.48	21.03	31.36	13.22	53.33	5.40	62.71	10.32
95th-Percentile Queue Length [veh/ln]	4.00	12.27	12.04	1.51	2.26	0.95	3.84	0.39	4.51	0.74
95th-Percentile Queue Length [ft/ln]	100.00	306.80	301.06	37.86	56.45	23.79	96.00	9.72	112.87	18.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.95	36.00	36.55	47.31	29.04	29.04	9.81	7.35	7.35	9.02	7.56	6.30
Movement LOS	C	D	D	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	35.92			35.13			7.76			7.46		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	23.37											
Intersection LOS	C											
Intersection V/C	0.350											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 23.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.371

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	590	50	30	10	40	0	0	0	6	230	30
Base Volume Input [veh/h]	14	590	50	30	10	40	0	0	0	6	230	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	590	50	30	10	40	0	0	0	6	230	30
Peak Hour Factor	0.9399	0.8905	0.8905	0.7826	0.7826	0.7826	1.0000	1.0000	1.0000	0.9301	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	166	14	10	3	13	0	0	0	2	69	9
Total Analysis Volume [veh/h]	15	663	56	38	13	51	0	0	0	6	274	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	178			3			54			110		
Bicycle Volume [bicycles/h]	23			4			4			13		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	40	40	5	49	40
g / C, Green / Cycle	0.40	0.40	0.05	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.18	0.04	0.02	0.04	0.17
s, saturation flow rate [veh/h]	3618	1336	1810	1602	1856
c, Capacity [veh/h]	1451	536	83	790	752
d1, Uniform Delay [s]	21.95	18.71	46.48	13.39	21.23
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.04	0.39	1.47	0.20	1.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

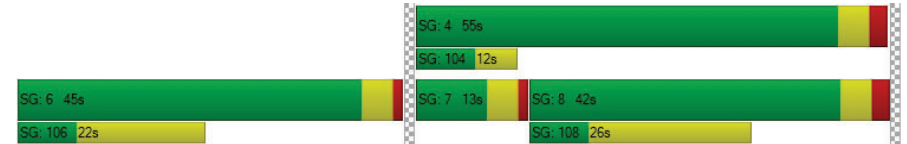
X, volume / capacity	0.46	0.10	0.46	0.08	0.41
d, Delay for Lane Group [s/veh]	22.99	19.11	47.95	13.59	22.89
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.78	0.86	0.94	0.77	5.43
50th-Percentile Queue Length [ft/ln]	144.58	21.52	23.54	19.37	135.69
95th-Percentile Queue Length [veh/ln]	9.73	1.55	1.70	1.39	9.25
95th-Percentile Queue Length [ft/ln]	243.18	38.74	42.38	34.86	231.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	22.99	19.11	47.95	13.59	13.59	0.00	0.00	0.00	0.00	22.89	22.89
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		22.69		26.39		0.00				22.89		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		23.08										
Intersection LOS		C										
Intersection V/C		0.371										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 19.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.250

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	30	80	30	10	120	10	40	140	30	20	150	30
Base Volume Input [veh/h]	30	80	30	10	120	10	40	140	30	20	150	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	80	30	10	120	10	40	140	30	20	150	30
Peak Hour Factor	0.8225	0.8225	0.8225	0.8437	0.8437	0.8437	0.8830	0.8830	0.8830	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	24	9	3	36	3	11	40	8	6	42	8
Total Analysis Volume [veh/h]	36	97	36	12	142	12	45	159	34	22	166	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	16	16	75	75	75
g / C, Green / Cycle	0.16	0.16	0.75	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate	0.11	0.09	0.14	0.10	0.02
s, saturation flow rate [veh/h]	1553	1811	1687	1804	1576
c, Capacity [veh/h]	287	322	1311	1396	1184
d1, Uniform Delay [s]	39.60	39.06	3.54	3.42	3.15
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.72	0.48	0.30	0.20	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.52	0.18	0.13	0.03
d, Delay for Lane Group [s/veh]	40.32	39.54	3.85	3.63	3.20
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.90	3.74	1.15	0.87	0.14
50th-Percentile Queue Length [ft/ln]	97.43	93.58	28.82	21.83	3.57
95th-Percentile Queue Length [veh/ln]	7.01	6.74	2.08	1.57	0.26
95th-Percentile Queue Length [ft/ln]	175.37	168.45	51.88	39.30	6.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.32	40.32	40.32	39.54	39.54	39.54	3.85	3.85	3.85	3.63	3.63	3.20
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.32			39.54			3.85			3.56		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	18.99											
Intersection LOS	B											
Intersection V/C	0.250											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 14.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.311

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	10	60	40	60	80	20	30	350	30	30	280	40
Base Volume Input [veh/h]	10	60	40	60	80	20	30	350	30	30	280	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	60	40	60	80	20	30	350	30	30	280	40
Peak Hour Factor	0.9629	0.9629	0.9629	0.8875	0.8875	0.8875	0.8500	0.8500	0.8500	0.9263	0.9263	0.9263
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	16	10	17	23	6	9	103	9	8	76	11
Total Analysis Volume [veh/h]	10	62	42	68	90	23	35	412	35	32	302	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	18	18	18	18	69	69	69	69	69	69
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.69	0.69	0.69	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.06	0.07	0.04	0.24	0.03	0.04	0.18	0.03
s, saturation flow rate [veh/h]	1114	1545	1140	1612	971	1710	1378	884	1710	1356
c, Capacity [veh/h]	181	280	186	293	655	1174	946	575	1174	930
d1, Uniform Delay [s]	41.07	35.89	43.03	36.00	8.29	6.47	5.04	9.66	5.97	5.08
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.30	0.45	0.31	0.16	0.83	0.07	0.18	0.53	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.37	0.37	0.39	0.05	0.35	0.04	0.06	0.26	0.05
d, Delay for Lane Group [s/veh]	41.11	36.19	43.47	36.31	8.44	7.30	5.12	9.85	6.50	5.17
Lane Group LOS	D	D	D	D	A	A	A	A	A	A
Critical Lane Group	No	No	No	Yes	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.22	2.21	1.60	2.41	0.33	3.44	0.23	0.33	2.31	0.28
50th-Percentile Queue Length [ft/ln]	5.59	55.24	40.10	60.18	8.18	85.95	5.72	8.30	57.85	7.09
95th-Percentile Queue Length [veh/ln]	0.40	3.98	2.89	4.33	0.59	6.19	0.41	0.60	4.17	0.51
95th-Percentile Queue Length [ft/ln]	10.07	99.43	72.18	108.33	14.72	154.72	10.30	14.94	104.13	12.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.11	36.19	36.19	43.47	36.31	36.31	8.44	7.30	5.12	9.85	6.50	5.17
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	36.63			39.00			7.23			6.63		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.92											
Intersection LOS	B											
Intersection V/C	0.311											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.289

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	20	150	30	20	100	20	70	150	50	30	190	20
Base Volume Input [veh/h]	20	150	30	20	100	20	70	150	50	30	190	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	150	30	20	100	20	70	150	50	30	190	20
Peak Hour Factor	0.8965	0.8965	0.8965	0.7875	0.7875	0.7875	0.7827	0.7827	0.7827	0.8125	0.8125	0.8125
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	42	8	6	32	6	22	48	16	9	58	6
Total Analysis Volume [veh/h]	22	167	33	25	127	25	89	192	64	37	234	25
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	18	18	18	18	73	73	73
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.73	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.02	0.11	0.02	0.09	0.18	0.04	0.17
s, saturation flow rate [veh/h]	1188	1819	1182	1786	1569	1573	1767
c, Capacity [veh/h]	170	331	140	325	1186	1143	1324
d1, Uniform Delay [s]	42.87	37.59	45.36	36.57	4.40	3.91	4.46
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	0.67	0.22	0.39	0.47	0.09	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

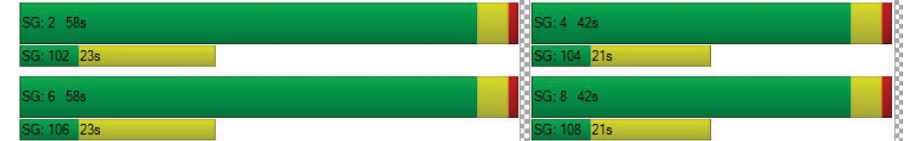
X, volume / capacity	0.13	0.60	0.18	0.47	0.24	0.06	0.22
d, Delay for Lane Group [s/veh]	42.99	38.26	45.58	36.96	4.87	4.00	4.85
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.52	4.57	0.61	3.37	1.64	0.33	1.73
50th-Percentile Queue Length [ft/ln]	12.94	114.24	15.23	84.22	40.94	8.24	43.13
95th-Percentile Queue Length [veh/ln]	0.93	8.08	1.10	6.06	2.95	0.59	3.11
95th-Percentile Queue Length [ft/ln]	23.29	201.89	27.42	151.59	73.69	14.83	77.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.99	38.26	38.26	45.58	36.96	36.96	4.87	4.87	4.00	4.85	4.85	4.85
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	38.73			38.18			4.71			4.85		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.71											
Intersection LOS	B											
Intersection V/C	0.289											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.5
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.341

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	20	210	30	40	80	20	30	330	10	20	350	70
Base Volume Input [veh/h]	20	210	30	40	80	20	30	330	10	20	350	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	210	30	40	80	20	30	330	10	20	350	70
Peak Hour Factor	0.9300	0.9300	0.9300	0.7908	0.7908	0.7908	0.9059	0.9059	0.9059	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	56	8	13	25	6	8	91	3	5	96	19
Total Analysis Volume [veh/h]	22	226	32	51	101	25	33	364	11	22	382	76
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	65	65	65	65	65	65
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.05	0.07	0.03	0.10	0.10	0.02	0.20	0.05
s, saturation flow rate [veh/h]	1261	1847	1126	1814	1010	1900	1875	1012	1900	1552
c, Capacity [veh/h]	243	403	148	396	623	1234	1218	673	1234	1009
d1, Uniform Delay [s]	37.98	35.50	45.56	32.82	10.69	6.81	6.81	8.45	7.67	6.45
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.63	0.52	0.17	0.16	0.26	0.27	0.09	0.65	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.64	0.35	0.32	0.05	0.15	0.15	0.03	0.31	0.08
d, Delay for Lane Group [s/veh]	38.04	36.13	46.08	32.99	10.85	7.07	7.08	8.54	8.33	6.59
Lane Group LOS	D	D	D	C	B	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.48	5.78	1.26	2.60	0.36	1.52	1.51	0.21	3.50	0.59
50th-Percentile Queue Length [ft/ln]	12.04	144.56	31.57	64.94	9.02	37.99	37.79	5.15	87.44	14.70
95th-Percentile Queue Length [veh/ln]	0.87	9.73	2.27	4.68	0.65	2.74	2.72	0.37	6.30	1.06
95th-Percentile Queue Length [ft/ln]	21.67	243.15	56.83	116.89	16.23	68.39	68.02	9.27	157.39	26.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.04	36.13	36.13	46.08	32.99	32.99	10.85	7.07	7.08	8.54	8.33	6.59
Movement LOS	D	D	D	D	C	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	36.28			36.76			7.38			8.06		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.51											
Intersection LOS	B											
Intersection V/C	0.341											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.454

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	150	320	230	70	350	50	10	650	140	190	640	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	320	230	70	350	50	10	650	140	190	640	20
Peak Hour Factor	0.9050	0.9050	0.9050	0.9194	0.9194	0.9194	0.8737	0.8737	0.8737	0.9366	0.9366	0.9366
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	88	64	19	95	14	3	186	40	51	171	5
Total Analysis Volume [veh/h]	166	354	254	76	381	54	11	744	160	203	683	21
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	39			27			19			22		
Bicycle Volume [bicycles/h]	6			9			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	43	43	43	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.43	0.43	0.43	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.19	0.16	0.07	0.12	0.12	0.01	0.21	0.10	0.22	0.19	0.01
s, saturation flow rate [veh/h]	1207	1900	1560	1034	1900	1795	765	3618	1551	923	3618	1542
c, Capacity [veh/h]	432	670	551	136	442	418	311	1574	675	515	2008	856
d1, Uniform Delay [s]	23.73	25.74	25.01	47.37	33.32	33.42	23.94	20.10	17.80	12.60	12.20	10.03
k, delay calibration	0.30	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.55	0.24	0.22	1.32	0.33	0.36	0.21	1.02	0.83	2.26	0.46	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.53	0.46	0.56	0.50	0.51	0.04	0.47	0.24	0.39	0.34	0.02
d, Delay for Lane Group [s/veh]	25.28	25.98	25.24	48.69	33.64	33.78	24.16	21.12	18.63	14.86	12.66	10.09
Lane Group LOS	C	C	C	D	C	C	C	C	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.94	6.61	4.61	1.93	4.59	4.46	0.20	6.23	2.44	2.44	4.03	0.21
50th-Percentile Queue Length [ft/ln]	73.54	165.13	115.23	48.13	114.83	111.41	4.98	155.71	61.07	61.01	100.69	5.24
95th-Percentile Queue Length [veh/ln]	5.30	10.82	8.13	3.47	8.11	7.92	0.36	10.32	4.40	4.39	7.25	0.38
95th-Percentile Queue Length [ft/ln]	132.38	270.50	203.26	86.63	202.70	197.97	8.97	258.04	109.93	109.81	181.24	9.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.28	25.98	25.24	48.69	33.70	33.78	24.16	21.12	18.63	14.86	12.66	10.09
Movement LOS	C	C	C	D	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	25.59			35.94			20.72			13.09		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	22.21											
Intersection LOS	C											
Intersection V/C	0.454											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 34.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.757

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	80	700	70	10	690	10	10	70	60	50	130	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	700	70	10	690	10	10	70	60	50	130	30
Peak Hour Factor	0.9138	0.9138	0.9138	0.9461	0.9461	0.9461	0.7357	0.7357	0.7357	0.9154	0.9154	0.9154
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	192	19	3	182	3	3	24	20	14	36	8
Total Analysis Volume [veh/h]	88	766	77	11	729	11	14	95	82	55	142	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164			102			111			62		
Bicycle Volume [bicycles/h]	4			3			0			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	57	57	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.57	0.57	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.10	0.23	0.23	0.01	0.20	0.20	0.13	0.06	0.53	0.02
s, saturation flow rate [veh/h]	883	1900	1808	743	1900	1881	810	1323	375	1411
c, Capacity [veh/h]	589	1086	1033	500	999	989	261	360	148	384
d1, Uniform Delay [s]	7.67	11.86	11.92	7.43	13.97	13.98	29.33	28.23	33.84	27.12
k, delay calibration	0.10	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	1.08	1.16	0.08	1.06	1.08	0.40	0.12	187.41	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

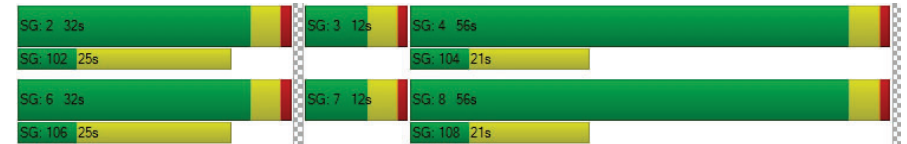
X, volume / capacity	0.15	0.39	0.40	0.02	0.37	0.37	0.42	0.23	1.33	0.09
d, Delay for Lane Group [s/veh]	7.77	12.94	13.08	7.51	15.03	15.06	29.73	28.35	221.26	27.15
Lane Group LOS	A	B	B	A	B	B	C	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.69	5.33	5.20	0.09	5.05	5.03	2.00	1.50	11.36	0.58
50th-Percentile Queue Length [ft/ln]	17.23	133.17	130.06	2.29	126.16	125.78	50.10	37.62	284.07	14.52
95th-Percentile Queue Length [veh/ln]	1.24	9.11	8.94	0.16	8.73	8.71	3.61	2.71	19.31	1.05
95th-Percentile Queue Length [ft/ln]	31.01	227.80	223.57	4.12	218.26	217.75	90.17	67.72	482.73	26.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.77	13.00	13.08	7.51	15.04	15.06	29.73	29.73	28.35	221.26	221.26	27.15
Movement LOS	A	B	B	A	B	B	C	C	C	F	F	C
d_A, Approach Delay [s/veh]	12.51			14.93			29.14			193.41		
Approach LOS	B			B			C			F		
d_I, Intersection Delay [s/veh]	34.67											
Intersection LOS	C											
Intersection V/C	0.757											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.8
Level Of Service: C
Volume to Capacity (v/c): 0.477

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	110	720	200	70	640	10	40	280	70	90	330	90
Base Volume Input [veh/h]	110	720	200	70	640	10	40	280	70	90	330	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	720	200	70	640	10	40	280	70	90	330	90
Peak Hour Factor	0.9396	0.9396	0.9396	0.8850	0.8850	0.8850	0.9209	0.9209	0.9209	0.9532	0.9532	0.9532
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	192	53	20	181	3	11	76	19	24	87	24
Total Analysis Volume [veh/h]	117	766	213	79	723	11	43	304	76	94	346	94
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			54			48			29		
Bicycle Volume [bicycles/h]	10			3			1			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	57	46	46	57	45	45	23	23	23	34	34	34
g / C, Green / Cycle	0.57	0.46	0.46	0.57	0.45	0.45	0.23	0.23	0.23	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.13	0.27	0.27	0.10	0.19	0.19	0.04	0.10	0.11	0.08	0.18	0.06
s, saturation flow rate [veh/h]	911	1900	1728	776	1900	1887	1026	1900	1718	1230	1900	1516
c, Capacity [veh/h]	528	868	790	427	860	854	136	438	396	432	650	519
d1, Uniform Delay [s]	11.10	20.13	20.28	12.31	18.58	18.59	45.92	32.99	33.20	23.34	26.47	23.08
k, delay calibration	0.25	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	2.88	3.31	0.95	1.55	1.57	0.49	0.26	0.32	0.09	0.25	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

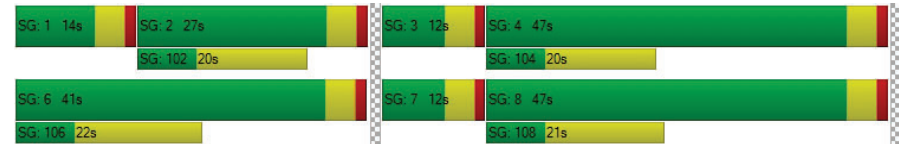
X, volume / capacity	0.22	0.59	0.60	0.18	0.43	0.43	0.32	0.44	0.47	0.22	0.53	0.18
d, Delay for Lane Group [s/veh]	11.58	23.01	23.58	13.26	20.13	20.16	46.41	33.26	33.52	23.43	26.73	23.15
Lane Group LOS	B	C	C	B	C	C	D	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.22	9.15	8.62	0.87	5.99	5.97	1.06	4.04	3.88	1.54	6.56	1.55
50th-Percentile Queue Length [ft/ln]	30.48	228.69	215.47	21.78	149.84	149.20	26.46	100.99	96.96	38.45	163.99	38.80
95th-Percentile Queue Length [veh/ln]	2.19	14.11	13.43	1.57	10.01	9.97	1.90	7.27	6.98	2.77	10.76	2.79
95th-Percentile Queue Length [ft/ln]	54.87	352.69	335.83	39.20	250.21	249.37	47.62	181.78	174.53	69.21	269.00	69.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.58	23.20	23.58	13.26	20.14	20.16	46.41	33.35	33.52	23.43	26.73	23.15
Movement LOS	B	C	C	B	C	C	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.04			19.48			34.71			25.52		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	23.83											
Intersection LOS	C											
Intersection V/C	0.477											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 38.4
Level Of Service: D
Volume to Capacity (v/c): 0.584

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	110	930	150	40	850	40	80	280	100	90	270	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	930	150	40	850	40	80	280	100	90	270	60
Peak Hour Factor	0.9760	0.9760	0.9760	0.9479	0.9479	0.9479	0.8510	0.8510	0.8510	0.8772	0.8772	0.8772
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	238	38	11	224	11	24	82	29	26	77	17
Total Analysis Volume [veh/h]	113	953	154	42	897	42	94	329	118	103	308	68
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	58			79			72			42		
Bicycle Volume [bicycles/h]	48			57			6			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	8	51	51	39	39	39	26	26	26	35	35
g / C, Green / Cycle	0.08	0.51	0.51	0.39	0.39	0.39	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.06	0.30	0.31	0.08	0.25	0.25	0.09	0.17	0.08	0.34	0.05
s, saturation flow rate [veh/h]	1810	1900	1752	517	1900	1850	1088	1900	1481	1223	1486
c, Capacity [veh/h]	142	978	902	152	742	722	72	488	380	405	524
d1, Uniform Delay [s]	45.29	16.75	17.01	38.92	24.73	24.82	50.00	33.39	30.00	30.00	21.93
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.14	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.81	2.49	2.94	4.47	4.16	4.40	142.58	2.13	0.17	48.84	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

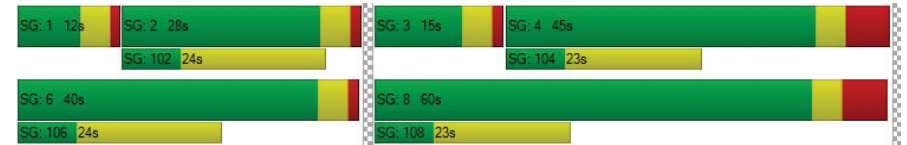
X, volume / capacity	0.80	0.58	0.60	0.28	0.64	0.64	1.30	0.67	0.31	1.02	0.13
d, Delay for Lane Group [s/veh]	49.10	19.25	19.95	43.39	28.90	29.22	192.58	35.52	30.17	78.84	21.97
Lane Group LOS	D	B	B	D	C	C	F	D	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.89	9.23	9.03	1.13	9.71	9.63	4.65	7.26	2.26	13.15	1.06
50th-Percentile Queue Length [ft/ln]	72.22	230.68	225.71	28.27	242.81	240.77	116.30	181.48	56.60	328.66	26.60
95th-Percentile Queue Length [veh/ln]	5.20	14.21	13.96	2.04	14.82	14.72	8.37	11.68	4.08	19.29	1.92
95th-Percentile Queue Length [ft/ln]	129.99	355.23	348.91	50.89	370.59	368.01	209.34	291.95	101.89	482.28	47.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.10	19.53	19.95	43.39	29.05	29.22	192.58	35.52	30.17	78.84	78.84	21.97
Movement LOS	D	B	B	D	C	C	F	D	C	E	E	C
d_A, Approach Delay [s/veh]	22.33		29.67		61.65			70.77				
Approach LOS	C		C		E			E				
d_I, Intersection Delay [s/veh]	38.37											
Intersection LOS	D											
Intersection V/C	0.584											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 66.7
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.580

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	80	1230	190	10	1100	10	6	90	100	66	90	30
Base Volume Input [veh/h]	80	1230	190	10	1100	10	6	90	100	66	90	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	1230	190	10	1100	10	6	90	100	66	90	30
Peak Hour Factor	0.9193	0.9193	0.9193	0.9119	0.9119	0.9119	0.8750	0.7635	0.7635	0.9427	0.8293	0.8293
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	335	52	3	302	3	2	29	33	18	27	9
Total Analysis Volume [veh/h]	87	1338	207	11	1206	11	7	118	131	70	109	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			32			25			16		
Bicycle Volume [bicycles/h]	13			12			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	2	7	4	6	5	2	3	1	6	8
Auxiliary Signal Groups									2.3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	0	7	7
Maximum Green [s]	15	30	40	15	30	40	0	40	15	0	40	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	30	0	30	0	0	30	0	30	30	0	30	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	18	17	0	18	17	0	17	0	0	17	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	0.0	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	6	35	35	2	30	30	40	40
g / C, Green / Cycle	0.07	0.38	0.38	0.02	0.33	0.33	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.41	0.43	0.01	0.32	0.32	0.15	0.08
s, saturation flow rate [veh/h]	1810	1900	1783	1810	1900	1891	1709	1802
c, Capacity [veh/h]	126	727	683	36	633	630	759	800
d1, Uniform Delay [s]	40.95	27.80	27.80	43.53	29.50	29.52	16.30	15.14
k, delay calibration	0.04	0.50	0.50	0.04	0.40	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.49	55.57	71.36	1.75	24.01	24.46	1.15	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

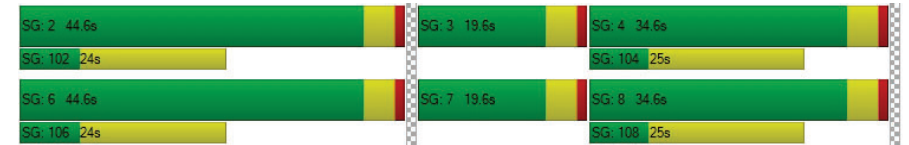
X, volume / capacity	0.69	1.08	1.12	0.31	0.96	0.96	0.33	0.18
d, Delay for Lane Group [s/veh]	43.44	83.37	99.16	45.28	53.51	53.98	17.45	15.64
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.95	26.01	27.40	0.26	16.60	16.63	3.45	1.85
50th-Percentile Queue Length [ft/ln]	48.78	650.31	685.07	6.43	414.90	415.71	86.37	46.20
95th-Percentile Queue Length [veh/ln]	3.51	36.17	38.81	0.46	23.28	23.32	6.22	3.33
95th-Percentile Queue Length [ft/ln]	87.81	904.33	970.21	11.57	581.93	582.90	155.46	83.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.44	89.92	99.16	45.28	53.74	53.98	0.00	17.45	17.45	0.00	15.64	15.64
Movement LOS	D	F	F	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	88.62		53.67		17.45		15.64					
Approach LOS	F		D		B		B					
d_I, Intersection Delay [s/veh]	66.73											
Intersection LOS	E											
Intersection V/C	0.580											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized Delay (sec / veh): 99.9
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.981

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	280	630	0	1180	40	0	0	0	0	750	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	630	0	1180	40	0	0	0	0	750	290	790
Peak Hour Factor	0.8698	0.8698	1.0000	1.0000	0.8931	0.8931	1.0000	1.0000	1.0000	0.9451	0.9451	0.9451
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	181	0	330	11	0	0	0	0	198	77	209
Total Analysis Volume [veh/h]	322	724	0	1321	45	0	0	0	0	794	307	836
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1			10			43		
Bicycle Volume [bicycles/h]	3			0			5			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	23	55	0	0	32	32	0	0	0	35	35	35
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	18	50	28	28	30	30	30	30
g / C, Green / Cycle	0.20	0.56	0.31	0.31	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.25	0.24	0.55	0.27	0.30	0.55
s, saturation flow rate [veh/h]	1810	3618	3618	1865	900	1845	1501	900
c, Capacity [veh/h]	355	2026	1130	583	304	623	507	304
d1, Uniform Delay [s]	35.35	10.89	28.42	28.14	29.80	26.99	28.20	29.80
k, delay calibration	0.28	0.50	0.50	0.50	0.50	0.25	0.33	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.99	0.49	6.16	10.01	298.5	5.42	14.61	296.8
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.36	0.81	0.78	1.63	0.80	0.89	1.63
d, Delay for Lane Group [s/veh]	54.34	11.38	34.59	38.14	328.3	32.41	42.81	326.6
Lane Group LOS	D	B	C	D	F	C	D	F
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	8.61	3.81	9.67	10.24	31.17	9.75	10.42	31.03
50th-Percentile Queue Length [ft/ln]	215.33	95.29	241.80	255.91	779.2	243.7	260.4	775.7
95th-Percentile Queue Length [veh/ln]	13.43	6.86	14.77	15.48	50.88	14.87	15.71	50.64
95th-Percentile Queue Length [ft/ln]	335.66	171.52	369.31	397.09	1271.	371.8	392.8	1266.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.34	11.38	0.00	0.00	35.69	38.14	0.00	0.00	0.00	212.84	36.11	213.64
Movement LOS	D	B			D	D				F	D	F
d_A, Approach Delay [s/veh]	24.61		35.77			0.00		185.71				
Approach LOS	C		D			A		F				
d_I, Intersection Delay [s/veh]	99.87											
Intersection LOS	F											
Intersection V/C	0.981											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 28.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.755

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	700	690	830	1020	0	180	380	260	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	700	690	830	1020	0	180	380	260	0	0	0
Peak Hour Factor	1.0000	0.8776	0.8776	0.8633	0.8633	1.0000	0.7468	0.7468	0.7468	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	199	197	240	295	0	60	127	87	0	0	0
Total Analysis Volume [veh/h]	0	798	786	961	1182	0	241	509	348	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			15			37		
Bicycle Volume [bicycles/h]	0			5			8			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	20	30	0	37	37	37	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	30	30	23	53	0	37	37	37	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	27	27	27	28	59	22	22	22
g / C, Green / Cycle	0.29	0.29	0.29	0.31	0.65	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26	0.26	0.27	0.33	0.21	0.21	0.22
s, saturation flow rate [veh/h]	3618	1514	1514	3514	3618	1843	1729	1584
c, Capacity [veh/h]	1066	446	446	1072	2354	455	427	392
d1, Uniform Delay [s]	28.69	30.35	30.35	29.94	8.16	32.31	32.31	32.71
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	2.45	2.45	11.64	0.77	1.75	1.85	2.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

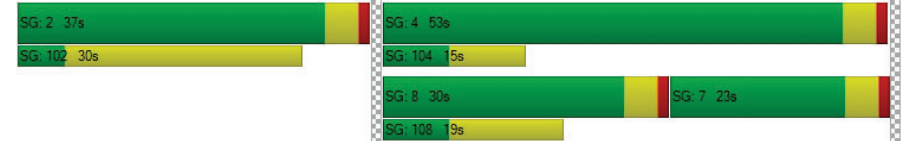
X, volume / capacity	0.74	0.89	0.89	0.90	0.50	0.85	0.85	0.89
d, Delay for Lane Group [s/veh]	29.08	32.80	32.80	41.58	8.93	34.06	34.17	35.51
Lane Group LOS	C	C	C	D	A	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.43	8.10	8.10	11.31	5.38	7.93	7.45	7.32
50th-Percentile Queue Length [ft/ln]	185.72	202.52	202.52	282.82	134.55	198.16	186.14	182.95
95th-Percentile Queue Length [veh/ln]	11.90	12.77	12.77	16.83	9.19	12.54	11.92	11.75
95th-Percentile Queue Length [ft/ln]	297.47	319.22	319.22	420.72	229.66	313.60	298.02	293.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	29.08	32.80	41.58	8.93	0.00	34.06	34.14	35.51	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]		30.94		23.57			34.55			0.00		
Approach LOS		C		C			C			A		
d_I, Intersection Delay [s/veh]		28.49										
Intersection LOS		C										
Intersection V/C		0.755										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 13.3
Level Of Service: B
Volume to Capacity (v/c): 0.407

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	750	160	80	610	90	190
Base Volume Input [veh/h]	750	160	80	610	90	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	750	160	80	610	90	190
Peak Hour Factor	0.8732	0.8732	0.9247	0.9247	0.8357	0.8357
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	46	22	165	27	57
Total Analysis Volume [veh/h]	859	183	87	660	108	227
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	79		91		60	
Bicycle Volume [bicycles/h]	2		28		7	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.24	0.12	0.13	0.18	0.07	0.17
s, saturation flow rate [veh/h]	3618	1554	652	3618	1564	1337
c, Capacity [veh/h]	2509	1077	447	2509	273	233
d1, Uniform Delay [s]	6.16	5.32	10.38	5.74	36.60	41.04
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.34	0.97	0.26	0.35	14.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.17	0.19	0.26	0.40	0.97
d, Delay for Lane Group [s/veh]	6.53	5.66	11.35	6.00	36.95	55.88
Lane Group LOS	A	A	B	A	D	E
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.30	1.27	1.01	2.36	2.33	6.38
50th-Percentile Queue Length [ft/ln]	82.41	31.71	25.33	58.96	58.16	159.55
95th-Percentile Queue Length [veh/ln]	5.93	2.28	1.82	4.24	4.19	10.53
95th-Percentile Queue Length [ft/ln]	148.33	57.07	45.60	106.12	104.69	263.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.53	5.66	11.35	6.00	36.95	55.88
Movement LOS	A	A	B	A	D	E
d_A, Approach Delay [s/veh]	6.38		6.62		49.77	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				13.31		
Intersection LOS				B		
Intersection V/C				0.407		

Sequence

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



Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 106.3
Level Of Service: F
Volume to Capacity (v/c): 0.771

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	10	300	430	100	180	20	40	420	10	150	40	40
Base Volume Input [veh/h]	10	300	430	100	180	20	40	420	10	150	40	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	300	430	100	180	20	40	420	10	150	40	40
Peak Hour Factor	0.9761	0.9761	0.9761	0.8833	0.8833	0.8833	0.7985	0.7985	0.7985	0.9583	0.9583	0.9583
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	77	110	28	51	6	13	131	3	39	10	10
Total Analysis Volume [veh/h]	10	307	441	113	204	23	50	526	13	157	42	42
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	38			99			69			77		
Bicycle Volume [bicycles/h]	1			1			56			15		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	44	0	10	44	0	0	26	0	0	26	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	45	36	45	40	17	17	17	17
g / C, Green / Cycle	0.57	0.45	0.57	0.50	0.22	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.01	0.45	0.13	0.12	0.04	0.29	0.18	0.05
s, saturation flow rate [veh/h]	1224	1652	896	1846	1200	1885	880	1586
c, Capacity [veh/h]	743	748	316	916	271	411	90	345
d1, Uniform Delay [s]	7.75	21.91	16.96	11.59	30.15	31.34	40.06	25.88
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.16	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	32.85	3.13	0.65	0.12	146.37	338.33	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

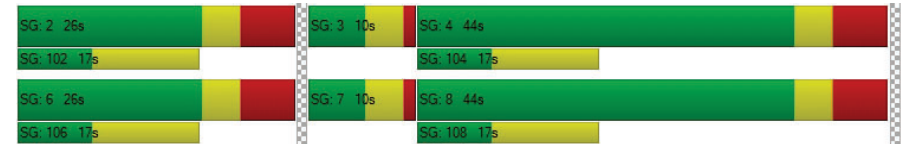
X, volume / capacity	0.01	1.00	0.36	0.25	0.18	1.31	1.74	0.24
d, Delay for Lane Group [s/veh]	7.76	54.76	20.10	12.23	30.28	177.71	378.39	26.02
Lane Group LOS	A	D	C	B	C	F	F	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	19.21	1.09	2.31	0.84	24.31	10.18	1.28
50th-Percentile Queue Length [ft/ln]	1.65	480.31	27.17	57.84	21.11	607.71	254.62	32.01
95th-Percentile Queue Length [veh/ln]	0.12	26.40	1.96	4.16	1.52	37.01	18.33	2.30
95th-Percentile Queue Length [ft/ln]	2.97	660.03	48.90	104.12	37.99	925.36	458.32	57.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.76	54.76	54.76	20.10	12.23	12.23	30.28	177.71	177.71	378.39	26.02	26.02
Movement LOS	A	D	D	C	B	B	C	F	F	F	C	C
d_A, Approach Delay [s/veh]	54.14			14.85			165.20			255.57		
Approach LOS	D			B			F			F		
d_I, Intersection Delay [s/veh]	106.32											
Intersection LOS	F											
Intersection V/C	0.771											

Sequence

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



Intersection Level Of Service Report
Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 13.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.464

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00				30.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				No				Yes			

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Base Volume Input [veh/h]	40	0	1170	260	310	890	0	32	1085	209	60	0	50	0	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	0	1170	260	310	890	0	32	1085	209	60	0	50	0	0	0	0
Peak Hour Factor	1.000	1.000	0.913	0.913	0.9733	0.9733	1.0000	1.0000	1.0000	1.0000	1.0000	0.8241	1.0000	0.8241	1.0000	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	320	71	80	229	0	8	271	52	18	0	15	0	0	0	0
Total Analysis Volume [veh/h]	40	0	1281	285	318	914	0	32	1085	209	73	0	61	0	0	0	0
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	25				40				0				0				
Bicycle Volume [bicycles/h]	0				3				13				0				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	60.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	0	53	0	10	53	0	0	0	0	27	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	53	53	66	58	15	15
g / C, Green / Cycle	0.04	0.59	0.59	0.73	0.64	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.35	0.18	0.49	0.25	0.04	0.04
s, saturation flow rate [veh/h]	1810	3618	1615	649	3618	1730	1501
c, Capacity [veh/h]	64	2148	959	493	2319	294	255
d1, Uniform Delay [s]	42.79	11.50	9.02	11.78	7.76	32.37	32.31
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.59	1.23	0.79	6.39	0.50	0.16	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

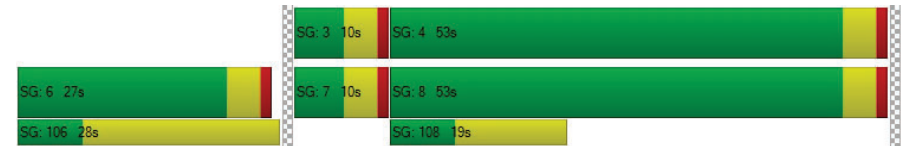
X, volume / capacity	0.62	0.60	0.30	0.65	0.39	0.25	0.24
d, Delay for Lane Group [s/veh]	46.38	12.73	9.81	18.17	8.26	32.53	32.49
Lane Group LOS	D	B	A	B	A	C	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	7.56	2.72	2.38	3.88	1.38	1.15
50th-Percentile Queue Length [ft/ln]	23.32	189.12	68.07	59.61	96.93	34.39	28.73
95th-Percentile Queue Length [veh/ln]	1.68	12.08	4.90	4.29	6.98	2.48	2.07
95th-Percentile Queue Length [ft/ln]	41.97	301.89	122.53	107.30	174.47	61.90	51.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.38	0.00	12.73	9.81	18.17	8.26	0.00	0.00	0.00	0.00	32.53	0.00	32.49
Movement LOS	D		B	A	B	A					C		C
d_A, Approach Delay [s/veh]	13.05			10.82			0.00			32.51			
Approach LOS	B			B			A			C			
d_I, Intersection Delay [s/veh]	13.00												
Intersection LOS	B												
Intersection V/C	0.464												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 49.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.949

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	30	2560	2	340	2310	10	20	10	20	10	10	370
Base Volume Input [veh/h]	30	2560	2	340	2310	10	20	10	20	10	10	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	2560	2	340	2310	10	20	10	20	10	10	370
Peak Hour Factor	0.8616	0.8616	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	743	1	87	591	3	8	4	8	3	3	111
Total Analysis Volume [veh/h]	35	2971	2	348	2363	10	32	16	32	12	12	446
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	270	270	270	270	270	270	270	270
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	7	156	54	203	203	45	45	103
g / C, Green / Cycle	0.03	0.58	0.20	0.75	0.75	0.17	0.17	0.38
(v / s)_i Volume / Saturation Flow Rate	0.02	0.57	0.19	0.43	0.43	0.05	0.02	0.28
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1896	1469	1422	1615
c, Capacity [veh/h]	45	2989	364	2726	1429	264	257	620
d1, Uniform Delay [s]	130.73	56.53	106.53	14.38	14.40	100.11	94.92	70.78
k, delay calibration	0.04	0.04	0.24	0.04	0.10	0.04	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.63	3.51	23.57	0.07	0.35	0.24	0.06	7.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

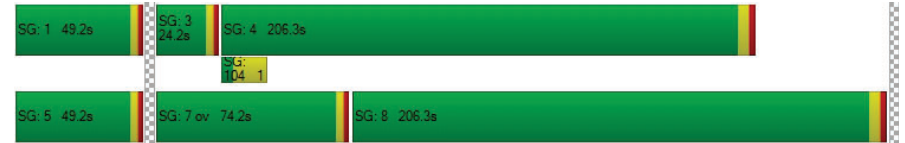
X, volume / capacity	0.78	0.99	0.96	0.57	0.57	0.30	0.09	0.72
d, Delay for Lane Group [s/veh]	141.36	60.04	130.10	14.45	14.74	100.35	94.98	77.84
Lane Group LOS	F	E	F	B	B	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.61	66.27	26.62	20.37	21.52	5.09	1.46	28.02
50th-Percentile Queue Length [ft/ln]	65.28	1656.67	665.58	509.31	538.10	127.26	36.51	700.45
95th-Percentile Queue Length [veh/ln]	4.70	79.62	35.09	27.77	29.13	8.79	2.63	36.70
95th-Percentile Queue Length [ft/ln]	117.50	1990.43	877.13	694.37	728.31	219.76	65.72	917.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	141.36	60.04	0.00	130.10	14.55	14.74	100.35	100.35	100.35	94.98	94.98	77.84
Movement LOS	F	E		F	B	B	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	60.99		29.33		100.35		78.72					
Approach LOS	E		C		F		E					
d_I, Intersection Delay [s/veh]	49.10											
Intersection LOS	D											
Intersection V/C	0.949											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 155.3
Level Of Service: F
Volume to Capacity (v/c): 1.141

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	310	560	80	20	390	40	40	80	250	0	50	160	70
Base Volume Input [veh/h]	310	560	80	20	390	40	40	80	250	0	50	160	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	310	560	80	20	390	40	40	80	250	0	50	160	70
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	149	21	6	112	11	11	22	68	0	16	50	22
Total Analysis Volume [veh/h]	330	597	85	23	446	46	44	88	274	0	63	201	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	2	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.02	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.18	0.31	0.07	0.01	0.23	0.03	0.32	0.18	0.72	0.10
s, saturation flow rate [veh/h]	1810	1900	1270	1810	1900	1352	407	1518	365	860
c, Capacity [veh/h]	189	1164	778	43	1012	720	123	570	112	159
d1, Uniform Delay [s]	44.75	10.92	8.03	48.21	14.27	11.31	40.01	23.78	40.17	36.98
k, delay calibration	0.36	0.50	0.50	0.04	0.50	0.50	0.50	0.09	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	351.13	1.61	0.28	3.68	1.39	0.17	100.99	0.52	636.39	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

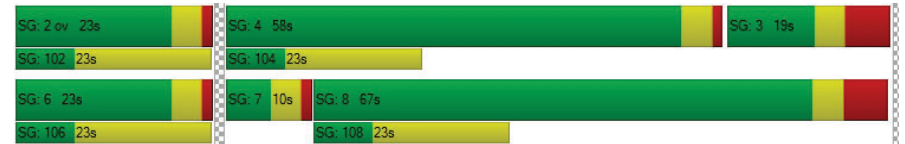
X, volume / capacity	1.75	0.51	0.11	0.53	0.44	0.06	1.07	0.48	2.35	0.55
d, Delay for Lane Group [s/veh]	395.89	12.53	8.31	51.89	15.67	11.48	141.00	24.30	676.57	38.09
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	23.07	7.35	0.78	0.61	6.27	0.51	6.55	5.00	22.58	1.96
50th-Percentile Queue Length [ft/ln]	576.73	183.78	19.40	15.22	156.64	12.85	163.82	124.96	564.58	49.11
95th-Percentile Queue Length [veh/ln]	36.68	11.80	1.40	1.10	10.37	0.93	11.09	8.67	38.53	3.54
95th-Percentile Queue Length [ft/ln]	916.89	294.95	34.92	27.39	259.26	23.13	277.16	216.63	963.27	88.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	395.89	12.53	8.31	51.89	15.67	11.48	141.00	141.00	24.30	676.5	676.5	676.5	38.09
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	137.19			16.91			62.24			516.95			
Approach LOS	F			B			E			F			
d_I, Intersection Delay [s/veh]	155.26												
Intersection LOS	F												
Intersection V/C	1.141												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	46.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.458

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	550	240	180	470	300	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	550	240	180	470	300	350
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	149	65	47	124	86	101
Total Analysis Volume [veh/h]	595	260	190	496	345	403
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.16	0.19	0.20	0.14	0.20	0.15	0.23
s, saturation flow rate [veh/h]	3618	1370	970	3618	1299	1676	1064
c, Capacity [veh/h]	2090	792	709	2509	226	292	186
d1, Uniform Delay [s]	10.67	11.00	5.72	5.44	41.27	39.96	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.25	0.07	0.33
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	1.11	0.93	0.18	91.21	4.46	156.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

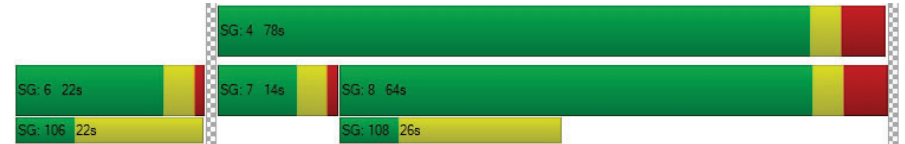
X, volume / capacity	0.28	0.33	0.27	0.20	1.15	0.84	1.29
d, Delay for Lane Group [s/veh]	11.01	12.11	6.65	5.61	132.48	44.42	197.62
Lane Group LOS	B	B	A	A	F	D	F
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.25	3.08	1.38	1.68	11.24	6.17	12.57
50th-Percentile Queue Length [ft/ln]	81.13	76.97	34.39	41.92	280.94	154.17	314.15
95th-Percentile Queue Length [veh/ln]	5.84	5.54	2.48	3.02	17.86	10.24	20.50
95th-Percentile Queue Length [ft/ln]	146.03	138.55	61.90	75.45	446.41	255.99	512.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.01	12.11	6.65	5.61	109.04	138.21
Movement LOS	B	B	A	A	F	F
d_A, Approach Delay [s/veh]	11.34		5.90		124.33	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	46.64					
Intersection LOS	D					
Intersection V/C	0.458					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 12.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.348

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	760	90	60	800	50	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	760	90	60	800	50	110
Peak Hour Factor	0.9093	0.9093	0.9413	0.9413	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	209	25	16	212	15	32
Total Analysis Volume [veh/h]	836	99	64	850	59	130
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389		253	
Bicycle Volume [bicycles/h]	6		7		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.23	0.07	0.10	0.23	0.11
s, saturation flow rate [veh/h]	3618	1339	663	3618	1671
c, Capacity [veh/h]	2236	827	390	2236	417
d1, Uniform Delay [s]	9.47	7.87	14.97	9.52	31.69
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	0.30	0.90	0.49	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

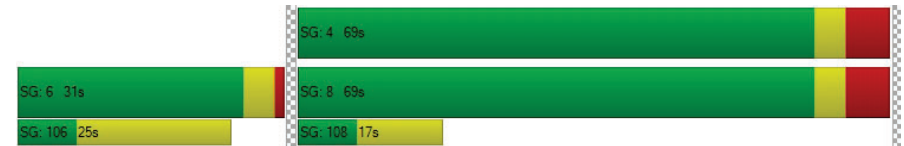
X, volume / capacity	0.37	0.12	0.16	0.38	0.45
d, Delay for Lane Group [s/veh]	9.95	8.16	15.87	10.01	31.98
Lane Group LOS	A	A	B	B	C
Critical Lane Group	No	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	4.34	0.89	0.92	4.44	3.81
50th-Percentile Queue Length [ft/ln]	108.53	22.31	22.91	110.93	95.24
95th-Percentile Queue Length [veh/ln]	7.76	1.61	1.65	7.89	6.86
95th-Percentile Queue Length [ft/ln]	193.96	40.15	41.24	197.29	171.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.95	8.16	15.87	10.01	31.98	31.98
Movement LOS	A	A	B	B	C	C
d_A, Approach Delay [s/veh]	9.76		10.42		31.98	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	12.12					
Intersection LOS	B					
Intersection V/C	0.348					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	770	190	90	760	150	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	770	190	90	760	150	90
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	217	54	26	217	41	25
Total Analysis Volume [veh/h]	868	214	103	869	165	99
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.24	0.17	0.13	0.24	0.20	0.08
s, saturation flow rate [veh/h]	3618	1296	806	3618	832	1238
c, Capacity [veh/h]	2190	785	612	2618	120	325
d1, Uniform Delay [s]	10.24	9.33	4.95	5.02	42.78	29.54
k, delay calibration	0.50	0.50	0.50	0.50	0.24	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.54	0.86	0.60	0.34	191.70	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.27	0.17	0.33	1.37	0.30
d, Delay for Lane Group [s/veh]	10.78	10.18	5.54	5.36	234.48	29.74
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.78	2.26	0.62	2.86	9.32	1.91
50th-Percentile Queue Length [ft/ln]	119.62	56.54	15.59	71.52	233.10	47.73
95th-Percentile Queue Length [veh/ln]	8.37	4.07	1.12	5.15	16.08	3.44
95th-Percentile Queue Length [ft/ln]	209.31	101.77	28.07	128.73	402.08	85.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.78	10.18	5.54	5.36	234.48	29.74
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.66		5.38		157.70	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	25.20					
Intersection LOS	C					
Intersection V/C	0.460					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 37.2
Level Of Service: D
Volume to Capacity (v/c): 0.464

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	20	730	142	67	750	90	20	13	80	190	10	170
Base Volume Input [veh/h]	20	730	142	67	750	90	20	13	80	190	10	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	730	142	67	750	90	20	13	80	190	10	170
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	205	41	18	197	24	6	6	23	53	3	48
Total Analysis Volume [veh/h]	22	819	165	71	788	95	23	24	94	213	11	191
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	79	79	71	71	12	24	24
g / C, Green / Cycle	0.53	0.53	0.48	0.48	0.08	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.23	0.23	0.24	0.07	0.12	0.14
s, saturation flow rate [veh/h]	722	3618	1900	1817	1650	1814	1325
c, Capacity [veh/h]	343	1907	905	865	136	287	209
d1, Uniform Delay [s]	19.27	21.68	26.81	27.18	67.90	60.65	62.11
k, delay calibration	0.04	0.50	0.50	0.50	0.14	0.07	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	0.71	1.88	2.15	17.06	2.96	18.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

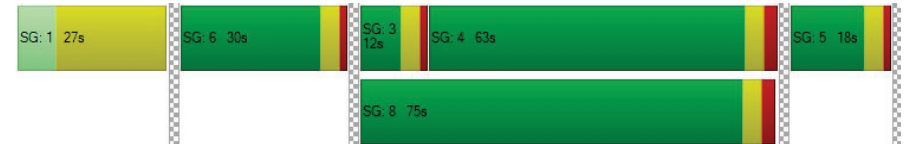
X, volume / capacity	0.06	0.43	0.49	0.51	0.86	0.78	0.91
d, Delay for Lane Group [s/veh]	19.30	22.38	28.69	29.33	84.96	63.60	80.35
Lane Group LOS	B	C	C	C	F	E	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.38	9.09	11.36	11.56	5.07	8.52	8.30
50th-Percentile Queue Length [ft/ln]	9.43	227.23	284.05	288.97	126.67	213.00	207.38
95th-Percentile Queue Length [veh/ln]	0.68	14.03	16.89	17.13	8.76	13.31	13.02
95th-Percentile Queue Length [ft/ln]	16.98	350.84	422.26	428.36	218.96	332.67	325.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.30	22.38	0.00	0.00	28.97	29.33	84.96	0.00	84.96	63.60	63.60	80.35
Movement LOS	B	C			C	C	F		F	E	E	F
d_A, Approach Delay [s/veh]	22.30		29.01			84.96		71.31				
Approach LOS	C		C			F		E				
d_I, Intersection Delay [s/veh]	37.19											
Intersection LOS	D											
Intersection V/C	0.464											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 25.4
 Level Of Service: C
 Volume to Capacity (v/c): 0.497

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	360	620	930	50	110	640
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	620	930	50	110	640
Peak Hour Factor	0.9528	0.9528	0.9744	0.9744	0.9594	0.9594
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	163	239	13	29	167
Total Analysis Volume [veh/h]	378	651	954	51	115	667
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	78	78	78	13	33
g / C, Green / Cycle	0.13	0.65	0.65	0.65	0.11	0.27
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.26	0.04	0.09	0.23
s, saturation flow rate [veh/h]	3514	3618	3618	1342	1221	2859
c, Capacity [veh/h]	442	2357	2357	875	131	777
d1, Uniform Delay [s]	51.35	8.88	9.89	7.57	52.70	41.47
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.87	0.29	0.52	0.13	6.83	1.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

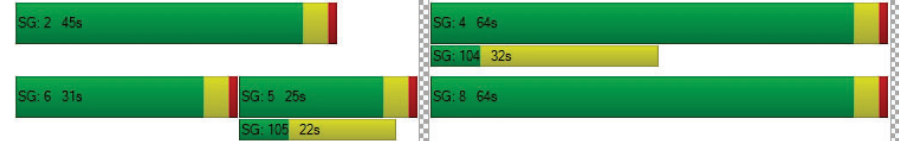
X, volume / capacity	0.86	0.28	0.40	0.06	0.87	0.86
d, Delay for Lane Group [s/veh]	53.22	9.17	10.41	7.70	59.54	42.57
Lane Group LOS	D	A	B	A	E	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.67	3.56	5.83	0.49	3.83	10.00
50th-Percentile Queue Length [ft/ln]	141.85	89.02	145.64	12.34	95.71	250.08
95th-Percentile Queue Length [veh/ln]	9.58	6.41	9.78	0.89	6.89	15.19
95th-Percentile Queue Length [ft/ln]	239.51	160.23	244.60	22.22	172.28	379.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.22	9.17	10.41	7.70	59.54	42.57
Movement LOS	D	A	B	A	E	D
d_A, Approach Delay [s/veh]	25.35		10.27		45.07	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	25.45					
Intersection LOS	C					
Intersection V/C	0.497					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 37.3
Level Of Service: D
Volume to Capacity (v/c): 0.546

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	40	120	40	3	280	98	150	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	40	120	40	3	280	98	150	220
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	13	40	13	1	74	26	40	59
Total Analysis Volume [veh/h]	0	0	0	0	53	159	53	3	295	103	161	236
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	6				70				188			
Bicycle Volume [bicycles/h]	33				8				56			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0
Rest in Walk						No					No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall						Yes			Yes		Yes	
Maximum Recall						No			No		No	
Pedestrian Recall						No			No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	62	62	62
g / C, Green / Cycle	0.41	0.41	0.41	0.51	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.04	0.06	0.07	0.23	0.08	0.16
s, saturation flow rate [veh/h]	1187	1900	1554	1289	1900	1458
c, Capacity [veh/h]	475	786	643	700	976	749
d1, Uniform Delay [s]	26.55	21.88	22.11	17.55	15.51	16.94
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	0.37	0.54	1.86	0.36	1.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.14	0.16	0.42	0.17	0.32
d, Delay for Lane Group [s/veh]	27.02	22.24	22.65	19.42	15.87	18.04
Lane Group LOS	C	C	C	B	B	B
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.09	1.97	1.92	4.98	2.40	3.92
50th-Percentile Queue Length [ft/ln]	27.31	49.14	48.11	124.49	60.09	97.96
95th-Percentile Queue Length [veh/ln]	1.97	3.54	3.46	8.64	4.33	7.05
95th-Percentile Queue Length [ft/ln]	49.16	88.44	86.59	215.98	108.15	176.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	27.02	22.37	22.65	0.00	19.42	0.00	15.87	18.04
Movement LOS					C	C	C		B		B	B
d_A, Approach Delay [s/veh]	0.00				23.36				18.12			
Approach LOS	A				C				B			
d_I, Intersection Delay [s/veh]	37.27											
Intersection LOS	D											
Intersection V/C	0.546											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	20	670	130	220	1240	65	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	20	670	130	220	1240	65	50
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	178	34	61	344	17	13
Total Analysis Volume [veh/h]	1	21	711	138	244	1375	69	52
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	31	31	31	49	49	49
g / C, Green / Cycle	0.26	0.26	0.26	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.06	0.20	0.11	0.22	0.38	0.38
s, saturation flow rate [veh/h]	381	3618	1244	1089	1900	1854
c, Capacity [veh/h]	60	948	326	401	779	760
d1, Uniform Delay [s]	59.98	40.65	36.74	27.06	33.52	33.91
k, delay calibration	0.04	0.04	0.04	0.05	0.33	0.38
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.29	0.46	0.32	0.65	12.91	16.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

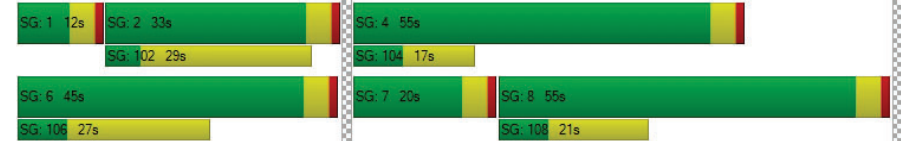
X, volume / capacity	0.35	0.75	0.42	0.61	0.92	0.94
d, Delay for Lane Group [s/veh]	61.27	41.11	37.06	27.71	46.44	50.61
Lane Group LOS	E	D	D	C	D	D
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	9.66	3.40	4.81	22.07	22.90
50th-Percentile Queue Length [ft/ln]	16.52	241.61	84.97	120.18	551.74	572.49
95th-Percentile Queue Length [veh/ln]	1.19	14.76	6.12	8.40	29.77	30.75
95th-Percentile Queue Length [ft/ln]	29.74	369.07	152.95	210.07	744.36	768.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	61.27	41.11	37.06	27.71	48.44	0.00	50.61
Movement LOS		E	D	D	C	D		D
d_A, Approach Delay [s/veh]	40.95			45.48				
Approach LOS	D			D				
d_I, Intersection Delay [s/veh]	37.27							
Intersection LOS	D							
Intersection V/C	0.546							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 144.4
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.127

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	60	90	110	0	80	90	40	50	230	50	0	120	350	170	
Base Volume Input [veh/h]	0	60	90	110	0	80	90	40	50	230	50	0	120	350	170	
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	60	90	110	0	80	90	40	50	230	50	0	120	350	170	
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	0.8684	0.8684	0.8684	1.000	0.968	0.968	0.968	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
Total 15-Minute Volume [veh/h]	0	16	24	29	0	22	24	11	14	66	14	0	31	90	44	
Total Analysis Volume [veh/h]	0	64	96	117	0	87	97	43	58	265	58	0	124	362	176	
Presence of On-Street Parking	No			No	No			No	No		No	No	No		No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	2	2	2	0	6	6	6
Auxiliary Signal Groups															
Lead / Lag	-	Lag	-	-	-	Lag	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	14	14	14	0	14	14	14
Rest in Walk															
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No		Yes				Yes		
Maximum Recall							No		No				No		
Pedestrian Recall			No				No		No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.95	0.07	0.18	0.12	0.15	0.15
s, saturation flow rate [veh/h]	1269	1702	239	881	1833	1074	1900	1654
c, Capacity [veh/h]	73	264	84	381	866	430	898	782
d1, Uniform Delay [s]	50.02	40.81	46.22	22.56	16.90	25.10	16.35	16.45
k, delay calibration	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.59	2.23	792.77	0.85	1.23	1.68	0.92	1.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

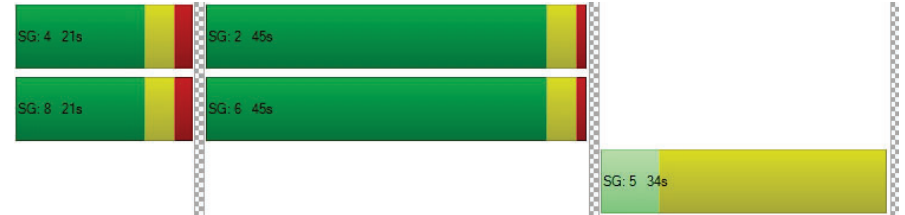
X, volume / capacity	0.88	0.81	2.69	0.15	0.37	0.29	0.32	0.33
d, Delay for Lane Group [s/veh]	61.61	43.04	838.99	23.41	18.13	26.78	17.27	17.57
Lane Group LOS	E	D	F	C	B	C	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.81	5.12	20.67	1.03	4.90	2.39	4.14	3.78
50th-Percentile Queue Length [ft/ln]	45.35	128.12	516.75	25.73	122.59	59.73	103.40	94.61
95th-Percentile Queue Length [veh/ln]	3.27	8.84	35.25	1.85	8.54	4.30	7.44	6.81
95th-Percentile Queue Length [ft/ln]	81.64	220.94	881.28	46.31	213.38	107.51	186.11	170.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.61	61.61	43.04	43.04	838.9	838.9	838.9	838.9	23.41	18.13	18.13	26.78	26.78	17.34	17.57
Movement LOS	E	E	D	D	F	F	F	F	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	47.33				838.99				18.93		19.17				
Approach LOS	D				F				B		B				
d_I, Intersection Delay [s/veh]	144.45														
Intersection LOS	F														
Intersection V/C	1.127														

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 29.2
Level Of Service: C
Volume to Capacity (v/c): 0.423

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	50	260	110	70	170	20	20	140	60	50	110	110
Base Volume Input [veh/h]	50	260	110	70	170	20	20	140	60	50	110	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	260	110	70	170	20	20	140	60	50	110	110
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	69	29	21	50	6	6	43	18	14	31	31
Total Analysis Volume [veh/h]	53	274	116	83	201	24	25	173	74	57	125	125
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	13	13	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	46	46
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.08	0.07	0.12	0.16	0.28
s, saturation flow rate [veh/h]	1174	1900	1546	1123	1853	1735	1100
c, Capacity [veh/h]	212	460	374	180	448	831	544
d1, Uniform Delay [s]	40.62	33.57	31.06	44.09	32.70	17.43	20.52
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	0.46	0.17	0.68	0.32	1.05	4.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

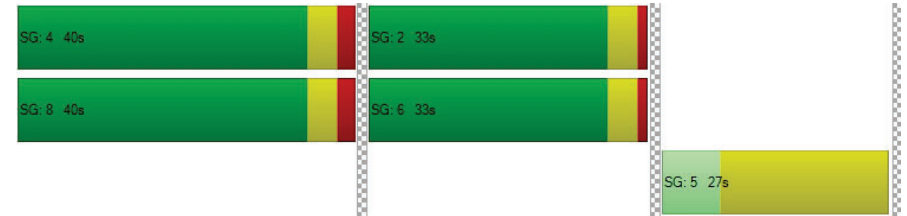
X, volume / capacity	0.25	0.60	0.31	0.46	0.50	0.33	0.56
d, Delay for Lane Group [s/veh]	40.85	34.04	31.24	44.77	33.03	18.48	24.71
Lane Group LOS	D	C	C	D	C	B	C
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.20	5.81	2.27	2.01	4.64	4.08	5.83
50th-Percentile Queue Length [ft/ln]	30.00	145.30	56.79	50.18	116.04	102.04	145.76
95th-Percentile Queue Length [veh/ln]	2.16	9.77	4.09	3.61	8.18	7.35	9.79
95th-Percentile Queue Length [ft/ln]	53.99	244.14	102.21	90.32	204.38	183.67	244.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.85	34.04	31.24	44.77	33.03	33.03	18.48	18.48	18.48	24.71	24.71	24.71
Movement LOS	D	C	C	D	C	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	34.12			36.19			18.48			24.71		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	29.23											
Intersection LOS	C											
Intersection V/C	0.423											

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 168.5
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.279

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	20	140	90	50	160	90	100	200	20	150	240	160
Base Volume Input [veh/h]	20	140	90	50	160	90	100	200	20	150	240	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	140	90	50	160	90	100	200	20	150	240	160
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	39	25	14	44	25	27	54	5	43	69	46
Total Analysis Volume [veh/h]	23	158	101	56	178	100	108	217	22	172	276	184
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.07	0.04	0.16	0.81	0.01	1.12	0.12
s, saturation flow rate [veh/h]	1119	1900	1524	1248	1750	400	1570	400	1581
c, Capacity [veh/h]	99	369	296	200	340	249	789	251	795
d1, Uniform Delay [s]	48.59	35.37	34.73	42.14	38.55	29.68	12.53	29.83	13.98
k, delay calibration	0.04	0.04	0.04	0.04	0.09	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	0.29	0.25	0.28	4.10	163.05	0.07	368.83	0.68
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

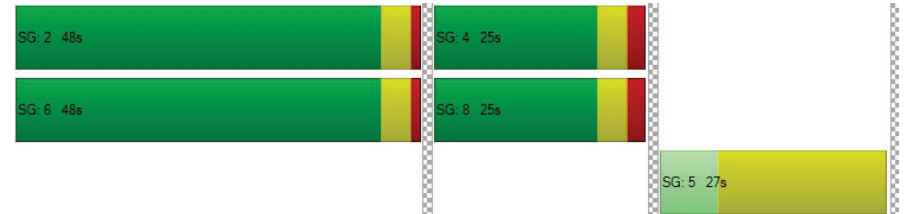
X, volume / capacity	0.23	0.43	0.34	0.28	0.82	1.30	0.03	1.78	0.23
d, Delay for Lane Group [s/veh]	49.03	35.66	34.98	42.42	42.65	192.73	12.59	398.66	14.66
Lane Group LOS	D	D	C	D	D	F	B	F	B
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.58	3.35	2.10	1.29	6.76	17.48	0.26	31.96	2.42
50th-Percentile Queue Length [ft/ln]	14.39	83.75	52.62	32.37	168.88	437.08	6.44	799.02	60.53
95th-Percentile Queue Length [veh/ln]	1.04	6.03	3.79	2.33	11.02	28.64	0.46	54.87	4.36
95th-Percentile Queue Length [ft/ln]	25.90	150.75	94.71	58.26	275.44	715.92	11.59	1371.68	108.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.03	35.66	34.98	42.42	42.65	42.65	192.73	192.73	12.59	398.66	398.66	14.66
Movement LOS	D	D	C	D	D	D	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	36.51			42.62			181.31			286.86		
Approach LOS	D			D			F			F		
d_I, Intersection Delay [s/veh]	168.49											
Intersection LOS	F											
Intersection V/C	1.279											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.2
Level Of Service: C
Volume to Capacity (v/c): 0.403

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	50	170	180	80	310	20	20	110	170	140	290	290
Base Volume Input [veh/h]	50	170	180	80	310	20	20	110	170	140	290	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	170	180	80	310	20	20	110	170	140	290	290
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	50	53	21	83	5	5	29	44	40	84	84
Total Analysis Volume [veh/h]	59	201	213	86	331	21	21	115	178	162	335	335
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.06	0.11	0.14	0.07	0.19	0.02	0.17	0.15	0.18	0.21
s, saturation flow rate [veh/h]	1045	1900	1473	1200	1876	1062	1680	1103	1900	1559
c, Capacity [veh/h]	126	464	360	236	459	377	727	391	823	675
d1, Uniform Delay [s]	47.63	31.92	33.37	40.16	35.13	25.92	19.47	29.63	19.52	20.47
k, delay calibration	0.04	0.04	0.04	0.04	0.09	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.01	0.24	0.58	0.35	2.38	0.28	1.66	3.22	1.49	2.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

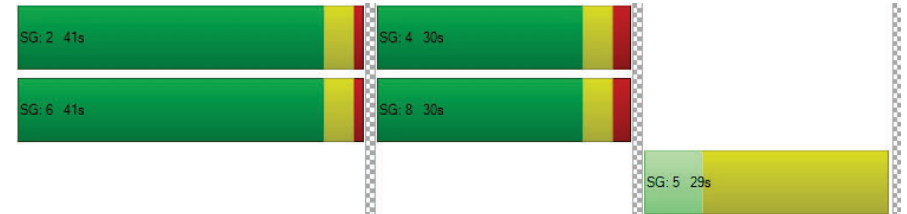
X, volume / capacity	0.47	0.43	0.59	0.36	0.77	0.06	0.40	0.41	0.41	0.50
d, Delay for Lane Group [s/veh]	48.64	32.15	33.95	40.51	37.52	26.20	21.13	32.85	21.01	23.07
Lane Group LOS	D	C	C	D	D	C	C	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.49	4.05	4.51	1.96	8.05	0.39	4.82	3.51	5.48	5.87
50th-Percentile Queue Length [ft/ln]	37.21	101.25	112.77	48.94	201.31	9.67	120.40	87.66	136.91	146.84
95th-Percentile Queue Length [veh/ln]	2.68	7.29	7.99	3.52	12.71	0.70	8.42	6.31	9.31	9.85
95th-Percentile Queue Length [ft/ln]	66.97	182.26	199.86	88.09	317.65	17.40	210.38	157.79	232.85	246.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.64	32.15	33.95	40.51	37.52	37.52	26.20	21.13	21.13	32.85	21.01	23.07
Movement LOS	D	C	C	D	D	D	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	35.02			38.11			21.47			24.14		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	29.21											
Intersection LOS	C											
Intersection V/C	0.403											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	37.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	10	340	0	29	400	50	66	90	0	150	310
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	340	0	29	400	50	66	90	0	150	310	180
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	91	0	8	107	13	20	27	0	40	82	48
Total Analysis Volume [veh/h]	11	365	0	31	430	54	79	108	0	159	329	191
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	32	59	59
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.23	0.04	0.20	0.20
s, saturation flow rate [veh/h]	954	1863	1863	1397	1860	1525
c, Capacity [veh/h]	89	502	502	377	906	742
d1, Uniform Delay [s]	57.10	39.81	41.62	33.30	19.68	19.83
k, delay calibration	0.04	0.15	0.47	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	2.79	16.14	0.06	1.35	1.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.12	0.73	0.86	0.14	0.41	0.42
d, Delay for Lane Group [s/veh]	57.33	42.60	57.75	33.36	21.04	21.57
Lane Group LOS	E	D	E	C	C	C
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.33	10.14	14.13	1.20	6.96	5.99
50th-Percentile Queue Length [ft/ln]	8.34	253.49	353.30	30.01	173.94	149.73
95th-Percentile Queue Length [veh/ln]	0.60	15.36	20.30	2.16	11.28	10.00
95th-Percentile Queue Length [ft/ln]	15.01	384.05	507.43	54.03	282.09	250.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.33	42.60	0.00	0.00	57.75	33.36	0.00	0.00	0.00	21.04	21.23	21.57
Movement LOS	E	D			E	C				C	C	C
d_A, Approach Delay [s/veh]	43.03		55.03			0.00		21.28				
Approach LOS	D		E			A		C				
d_I, Intersection Delay [s/veh]	37.21											
Intersection LOS	D											
Intersection V/C	0.435											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.415

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	90	240	120	190	320	30	40	240	40	260	530	60
Base Volume Input [veh/h]	90	240	120	190	320	30	40	240	40	260	530	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	240	120	190	320	30	40	240	40	260	530	60
Peak Hour Factor	0.9142	0.9142	0.9142	0.8503	0.8503	0.8503	0.9531	0.9531	0.9531	0.9548	0.9548	0.9548
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	66	33	56	94	9	10	63	10	68	139	16
Total Analysis Volume [veh/h]	98	263	131	223	376	35	42	252	42	272	555	63
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	39	39	39	51	51	51	30	15	15	30	22	22
g / C, Green / Cycle	0.43	0.43	0.43	0.57	0.57	0.57	0.33	0.16	0.16	0.33	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.08	0.18	0.20	0.02	0.05	0.08	0.09	0.19	0.17	0.17
s, saturation flow rate [veh/h]	1017	1900	1546	1269	1900	1570	819	1900	1662	1412	1900	1782
c, Capacity [veh/h]	385	820	667	734	1079	891	345	310	271	501	461	432
d1, Uniform Delay [s]	24.44	16.88	15.89	10.10	10.49	8.61	22.09	34.20	34.52	24.13	30.97	31.15
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.49	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	1.03	0.66	1.07	0.89	0.08	0.06	0.43	0.61	4.07	0.67	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

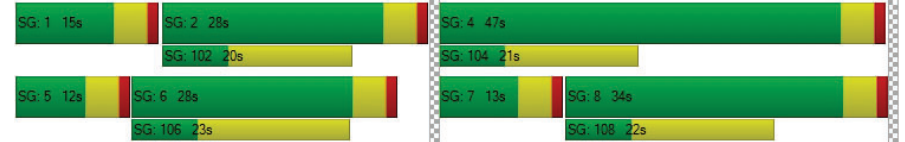
X, volume / capacity	0.25	0.32	0.20	0.30	0.35	0.04	0.12	0.48	0.53	0.54	0.68	0.70
d, Delay for Lane Group [s/veh]	26.03	17.91	16.55	11.16	11.38	8.69	22.15	34.63	35.13	28.21	31.64	31.94
Lane Group LOS	C	B	B	B	B	A	C	C	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.73	3.62	1.71	2.17	3.87	0.30	0.59	2.92	2.87	4.94	6.06	5.89
50th-Percentile Queue Length [ft/ln]	43.27	90.49	42.72	54.35	96.82	7.40	14.81	73.01	71.85	123.40	151.38	147.18
95th-Percentile Queue Length [veh/ln]	3.12	6.52	3.08	3.91	6.97	0.53	1.07	5.26	5.17	8.58	10.09	9.87
95th-Percentile Queue Length [ft/ln]	77.88	162.89	76.90	97.83	174.28	13.31	26.66	131.41	129.32	214.49	252.27	246.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.03	17.91	16.55	11.16	11.38	8.69	22.15	34.83	35.13	28.21	31.77	31.94
Movement LOS	C	B	B	B	B	A	C	C	D	C	C	C
d_A, Approach Delay [s/veh]	19.17			11.16			33.28			30.69		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.39											
Intersection LOS	C											
Intersection V/C	0.415											

Sequence

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



Intersection Level Of Service Report

Intersection 29: FOURTH STREET/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 7.9
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.325

Intersection Setup

Name	4th St			4th St			California Ave			California Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			0.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			California Ave			California Ave		
	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Input [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Peak Hour Factor	0.8437	0.8437	0.8437	0.9285	0.9285	0.9285	0.8506	0.8506	0.8506	0.9047	0.9047	0.9047
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	59	16	3	48	5	6	48	14	7	34	15
Total Analysis Volume [veh/h]	72	235	63	13	193	18	26	194	56	28	136	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	62			70			38			61		
Bicycle Volume [bicycles/h]	22			16			7			12		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	25	25	25	25	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	30	30	30	30	30	30	30	30	30	30	30	30
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	17	17	17	17	17	17	15	15	15	15	15	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C
C, Cycle Length [s]	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	11	11	11	10	10
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.01	0.11	0.16	0.13
s, saturation flow rate [veh/h]	1152	1773	1053	1855	1755	1677
c, Capacity [veh/h]	493	653	420	683	715	692
d1, Uniform Delay [s]	9.89	7.44	10.59	6.98	8.09	7.87
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.19	0.01	0.09	0.13	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

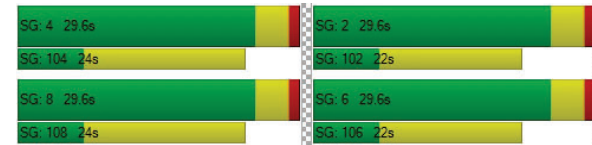
X, volume / capacity	0.15	0.46	0.03	0.31	0.39	0.32
d, Delay for Lane Group [s/veh]	9.94	7.62	10.60	7.08	8.22	7.97
Lane Group LOS	A	A	B	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	0.86	0.05	0.57	1.39	0.70
50th-Percentile Queue Length [ft/ln]	6.94	21.50	1.33	14.18	34.81	17.46
95th-Percentile Queue Length [veh/ln]	0.50	1.55	0.10	1.02	2.51	1.26
95th-Percentile Queue Length [ft/ln]	12.50	38.69	2.39	25.52	62.65	31.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.94	7.62	7.62	10.60	7.08	7.08	8.22	8.22	8.22	7.97	7.97	7.97
Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.07			7.28			8.22			7.97		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.93											
Intersection LOS	A											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	60	180	170	100	250	50	20	430	100	110	580	140
Base Volume Input [veh/h]	60	180	170	100	250	50	20	430	100	110	580	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	180	170	100	250	50	20	430	100	110	580	140
Peak Hour Factor	0.7730	0.7730	0.7730	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	58	55	27	67	13	5	114	27	30	160	39
Total Analysis Volume [veh/h]	78	233	220	108	269	54	21	457	106	121	640	154
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.14	0.09	0.14	0.03	0.03	0.31	0.11	0.22	0.22
s, saturation flow rate [veh/h]	1128	1900	1577	1166	1900	1581	694	1830	1064	1900	1754
c, Capacity [veh/h]	117	368	306	143	368	307	177	603	320	844	779
d1, Uniform Delay [s]	48.95	37.12	37.85	48.12	37.94	33.72	37.27	32.58	21.95	19.74	19.80
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.40	0.67	1.20	3.05	1.05	0.10	1.37	23.64	0.27	2.00	2.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

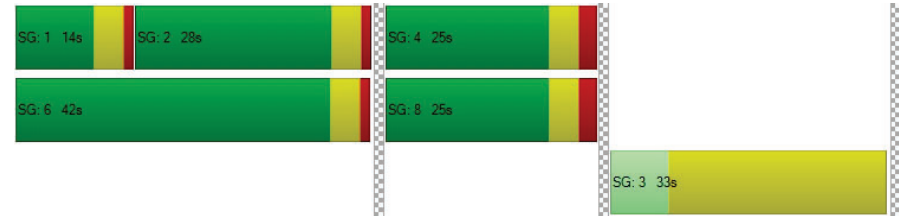
X, volume / capacity	0.66	0.63	0.72	0.76	0.73	0.18	0.12	0.93	0.38	0.49	0.49
d, Delay for Lane Group [s/veh]	51.35	37.79	39.05	51.17	38.99	33.82	38.64	56.21	22.22	21.74	22.02
Lane Group LOS	D	D	D	D	D	C	D	E	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.01	5.20	5.04	2.79	6.16	1.09	0.52	16.77	1.65	7.05	6.65
50th-Percentile Queue Length [ft/ln]	50.13	129.90	125.95	69.72	153.95	27.20	12.90	419.21	41.37	176.35	166.26
95th-Percentile Queue Length [veh/ln]	3.61	8.93	8.72	5.02	10.23	1.96	0.93	23.48	2.98	11.41	10.88
95th-Percentile Queue Length [ft/ln]	90.23	223.37	217.98	125.50	255.69	48.96	23.22	587.10	74.47	285.24	271.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.35	37.79	39.05	51.17	38.99	33.82	38.64	56.21	56.21	22.22	21.84	22.02
Movement LOS	D	D	D	D	D	C	D	E	E	C	C	C
d_A, Approach Delay [s/veh]	40.30		41.40		55.58			21.92				
Approach LOS	D		D		E			C				
d_I, Intersection Delay [s/veh]	37.28											
Intersection LOS	D											
Intersection V/C	0.493											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 64.7
Level Of Service: E
Volume to Capacity (v/c): 0.631

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	30	330	60	40	470	30	20	150	210	80	240	50
Base Volume Input [veh/h]	30	330	60	40	470	30	20	150	210	80	240	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	330	60	40	470	30	20	150	210	80	240	50
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	93	17	13	151	10	6	43	60	22	66	14
Total Analysis Volume [veh/h]	34	372	68	51	603	38	23	170	239	89	266	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	39	39	39	39	39	39	28	28
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.04	0.05	0.17	0.17	0.28	0.44
s, saturation flow rate [veh/h]	801	1900	1554	1026	1900	1852	1675	942
c, Capacity [veh/h]	265	746	610	296	746	727	514	312
d1, Uniform Delay [s]	30.06	22.94	19.29	32.12	22.23	22.26	34.36	36.60
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.31	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.00	2.38	0.37	1.26	1.84	1.90	9.96	163.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

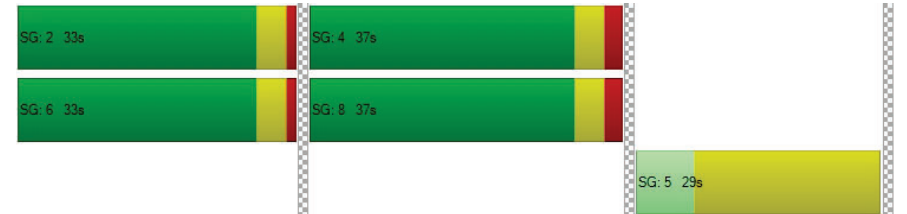
X, volume / capacity	0.13	0.50	0.11	0.17	0.43	0.44	0.84	1.32
d, Delay for Lane Group [s/veh]	31.06	25.31	19.66	33.38	24.07	24.17	44.32	199.59
Lane Group LOS	C	C	B	C	C	C	D	F
Critical Lane Group	No	Yes	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.71	6.85	1.04	1.10	5.74	5.65	11.30	21.80
50th-Percentile Queue Length [ft/ln]	17.76	171.21	26.00	27.51	143.48	141.22	282.42	544.93
95th-Percentile Queue Length [veh/ln]	1.28	11.14	1.87	1.98	9.67	9.55	16.81	34.00
95th-Percentile Queue Length [ft/ln]	31.98	278.51	46.79	49.52	241.71	238.66	420.23	850.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.06	25.31	19.66	33.38	24.11	24.17	44.32	44.32	44.32	199.59	199.59	199.59
Movement LOS	C	C	B	C	C	C	D	D	D	F	F	F
d_A, Approach Delay [s/veh]	24.91		24.80			44.32		199.59				
Approach LOS	C		C			D		F				
d_I, Intersection Delay [s/veh]	64.72											
Intersection LOS	E											
Intersection V/C	0.631											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 26.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.370

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	100	340	70	170	560	80	0	210	100	0	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	340	70	170	560	80	0	210	100	0	370	100
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	103	21	46	151	22	0	57	27	0	105	28
Total Analysis Volume [veh/h]	121	412	85	183	604	86	0	227	108	0	421	114
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	52	52	52	52	52	52	17	17	17	17
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52	0.52	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.16	0.22	0.05	0.18	0.19	0.19	0.12	0.07	0.14	0.15
s, saturation flow rate [veh/h]	765	1900	1583	989	1900	1807	1900	1558	1900	1746
c, Capacity [veh/h]	369	995	829	433	995	946	330	271	330	304
d1, Uniform Delay [s]	22.25	14.49	11.99	24.74	13.94	13.96	38.74	36.66	39.71	40.29
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.37	1.27	0.25	3.01	0.99	1.05	0.95	0.35	1.82	3.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

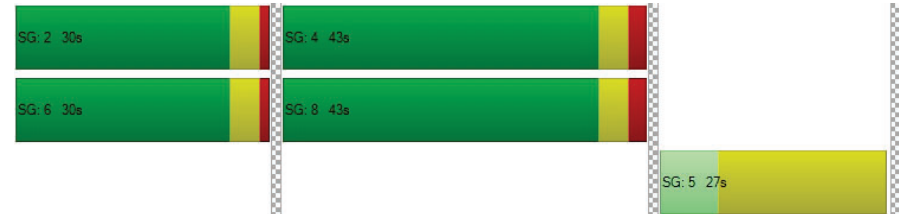
X, volume / capacity	0.33	0.41	0.10	0.42	0.35	0.36	0.69	0.40	0.81	0.88
d, Delay for Lane Group [s/veh]	24.62	15.77	12.24	27.75	14.93	15.01	39.70	37.01	41.53	43.60
Lane Group LOS	C	B	B	C	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.24	5.67	0.97	3.62	4.65	4.47	5.26	2.35	6.41	6.62
50th-Percentile Queue Length [ft/ln]	55.93	141.80	24.14	90.53	116.26	111.83	131.50	58.87	160.34	165.43
95th-Percentile Queue Length [veh/ln]	4.03	9.58	1.74	6.52	8.19	7.94	9.02	4.24	10.57	10.84
95th-Percentile Queue Length [ft/ln]	100.68	239.44	43.44	162.96	204.67	198.55	225.53	105.96	264.17	270.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.62	15.77	12.24	27.75	14.96	15.01	0.00	39.70	37.01	0.00	42.28	43.60
Movement LOS	C	B	B	C	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	17.01		17.65		38.83		42.56					
Approach LOS	B		B		D		D					
d_I, Intersection Delay [s/veh]	26.13											
Intersection LOS	C											
Intersection V/C	0.370											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 45.9
Level Of Service: D
Volume to Capacity (v/c): 0.587

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	130	510	180	70	570	70	0	280	120	160	390	110
Base Volume Input [veh/h]	130	510	180	70	570	70	0	280	120	160	390	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	510	180	70	570	70	0	280	120	160	390	110
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	147	52	23	183	23	0	78	33	46	112	31
Total Analysis Volume [veh/h]	150	590	208	90	733	90	0	312	134	183	446	126
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	12	43	43	54	38	38	22	38	34	34	34
g / C, Green / Cycle	0.10	0.36	0.36	0.45	0.32	0.32	0.18	0.32	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.08	0.31	0.13	0.09	0.22	0.22	0.16	0.09	0.14	0.23	0.08
s, saturation flow rate [veh/h]	1810	1900	1564	1006	1900	1815	1900	1562	1301	1900	1569
c, Capacity [veh/h]	176	677	558	295	599	573	343	493	281	534	441
d1, Uniform Delay [s]	53.41	36.08	28.69	24.97	36.13	36.20	48.28	30.77	36.42	40.60	33.79
k, delay calibration	0.10	0.50	0.50	0.50	0.50	0.50	0.14	0.04	0.46	0.23	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.45	14.39	1.91	2.65	6.67	7.12	11.36	0.11	10.35	7.17	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.87	0.37	0.30	0.70	0.70	0.91	0.27	0.65	0.84	0.29
d, Delay for Lane Group [s/veh]	63.85	50.47	30.60	27.62	42.80	43.32	59.64	30.88	46.77	47.77	33.92
Lane Group LOS	E	D	C	C	D	D	E	C	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.92	18.39	4.69	1.66	11.73	11.37	10.21	2.94	5.06	13.24	2.88
50th-Percentile Queue Length [ft/ln]	123.07	459.77	117.30	41.41	293.25	284.30	255.32	73.38	126.56	330.96	71.96
95th-Percentile Queue Length [veh/ln]	8.56	25.42	8.24	2.98	17.35	16.90	15.45	5.28	8.75	19.21	5.18
95th-Percentile Queue Length [ft/ln]	214.03	635.59	206.11	74.53	433.67	422.56	386.34	132.08	218.81	480.13	129.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.85	50.47	30.60	27.62	43.03	43.32	0.00	59.64	30.88	46.77	47.77	33.92
Movement LOS	E	D	C	C	D	D		E	C	D	D	C
d_A, Approach Delay [s/veh]	48.23			41.54			51.00			45.22		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.89											
Intersection LOS	D											
Intersection V/C	0.587											

Sequence

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



Intersection Level Of Service Report

Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 22.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.437

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	200	690	0	0	680	130	181	0	84	200	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	690	0	0	680	130	181	0	84	200	110	50
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	206	0	0	188	36	52	0	24	55	30	14
Total Analysis Volume [veh/h]	239	825	0	0	750	143	208	0	96	220	121	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	60	60	17	17
g / C, Green / Cycle	0.62	0.62	0.50	0.50	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.29	0.23	0.24	0.25	0.12	0.11
s, saturation flow rate [veh/h]	822	3618	1900	1770	1810	1626
c, Capacity [veh/h]	488	2233	953	887	252	227
d1, Uniform Delay [s]	13.02	11.39	19.50	19.95	50.61	49.85
k, delay calibration	0.33	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.30	0.47	1.66	2.04	3.69	2.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.37	0.47	0.50	0.87	0.78
d, Delay for Lane Group [s/veh]	15.31	11.86	21.16	21.99	54.30	52.02
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.03	5.42	8.31	8.56	6.78	5.28
50th-Percentile Queue Length [ft/ln]	75.73	135.51	207.84	213.97	169.49	131.89
95th-Percentile Queue Length [veh/ln]	5.45	9.24	13.04	13.36	11.05	9.04
95th-Percentile Queue Length [ft/ln]	136.31	230.97	326.05	333.92	276.25	226.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	15.31	11.86	0.00	0.00	21.49	21.99	0.00	0.00	0.00	54.30	52.02	52.02
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	12.64		21.57			0.00		53.29				
Approach LOS	B		C			A		D				
d_I, Intersection Delay [s/veh]	22.87											
Intersection LOS	C											
Intersection V/C	0.437											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.5
Level Of Service: C
Volume to Capacity (v/c): 0.582

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		920	380
	Northbound		Southbound			
Base Volume Input [veh/h]	360	0	0	940	920	380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	0	0	940	920	380
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	0	0	266	253	104
Total Analysis Volume [veh/h]	411	0	0	1063	1011	417
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	37	37
g / C, Green / Cycle	0.61	0.61	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.29	0.29	0.26
s, saturation flow rate [veh/h]	3618	3618	3514	1586
c, Capacity [veh/h]	2220	2220	1087	491
d1, Uniform Delay [s]	10.08	12.65	40.11	38.76
k, delay calibration	0.50	0.50	0.04	0.18
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.74	1.67	6.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

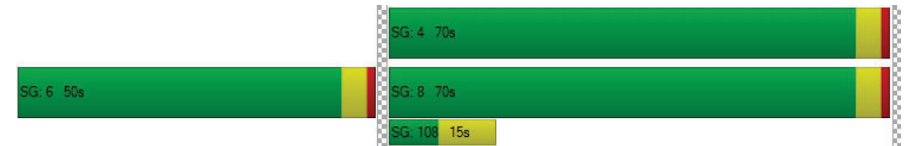
X, volume / capacity	0.19	0.48	0.93	0.85
d, Delay for Lane Group [s/veh]	10.27	13.40	41.78	45.66
Lane Group LOS	B	B	D	D
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.37	7.75	13.71	11.67
50th-Percentile Queue Length [ft/ln]	59.35	193.78	342.77	291.75
95th-Percentile Queue Length [veh/ln]	4.27	12.32	19.78	17.27
95th-Percentile Queue Length [ft/ln]	106.82	307.93	494.59	431.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.27	0.00	0.00	13.40	41.78	45.66
Movement LOS	B			B	D	D
d_A, Approach Delay [s/veh]	10.27		13.40		42.91	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]			27.48			
Intersection LOS			C			
Intersection V/C			0.582			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 26.0
Level Of Service: C
Volume to Capacity (v/c): 0.553

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	20	320	230	340	1280	130	30	380	40	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	320	230	340	1280	130	30	380	40	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	82	59	95	358	36	9	114	12	0	0	0
Total Analysis Volume [veh/h]	20	328	235	380	1430	145	36	454	48	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	24	24	68	89	89	15	15	15
g / C, Green / Cycle	0.02	0.20	0.20	0.56	0.74	0.74	0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.01	0.17	0.13	0.11	0.41	0.44	0.10	0.10	0.10
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1802	1882	1729	1631
c, Capacity [veh/h]	37	377	357	1983	1410	1337	230	212	200
d1, Uniform Delay [s]	58.14	46.57	44.32	12.76	6.82	7.09	51.40	51.38	51.55
k, delay calibration	0.04	0.27	0.10	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.43	14.03	1.96	0.02	1.60	1.91	3.00	3.19	3.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.87	0.66	0.19	0.56	0.59	0.83	0.83	0.85
d, Delay for Lane Group [s/veh]	62.57	60.60	46.28	12.78	8.42	9.00	54.40	54.57	55.54
Lane Group LOS	E	E	D	B	A	A	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.65	10.91	6.63	2.48	8.31	8.70	5.77	5.29	5.20
50th-Percentile Queue Length [ft/ln]	16.19	272.86	165.87	62.08	207.70	217.42	144.35	132.34	129.89
95th-Percentile Queue Length [veh/ln]	1.17	16.33	10.86	4.47	13.04	13.53	9.71	9.07	8.93
95th-Percentile Queue Length [ft/ln]	29.13	408.31	271.48	111.74	325.88	338.33	242.87	226.68	223.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	60.60	46.28	12.78	8.68	9.00	54.40	54.78	55.54	0.00	0.00	0.00
Movement LOS	E	E	D	B	A	A	D	D	E			
d_A, Approach Delay [s/veh]	54.90			9.50			54.82			0.00		
Approach LOS	D			A			D			A		
d_I, Intersection Delay [s/veh]	26.03											
Intersection LOS	C											
Intersection V/C	0.553											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 16.6
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.382

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	130	190	140	30	70	20	30	580	60	140	780	80
Base Volume Input [veh/h]	130	190	140	30	70	20	30	580	60	140	780	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	190	140	30	70	20	30	580	60	140	780	80
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	53	39	8	18	5	8	151	16	37	209	21
Total Analysis Volume [veh/h]	144	211	155	32	74	21	31	605	63	150	835	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	25	25	25	25	25	62	62	62	62	62	62
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.12	0.11	0.11	0.03	0.05	0.05	0.17	0.04	0.18	0.25	0.26
s, saturation flow rate [veh/h]	1163	1900	1450	1132	1737	614	3618	1424	811	1900	1752
c, Capacity [veh/h]	290	477	364	228	436	354	2231	878	489	1172	1080
d1, Uniform Delay [s]	37.57	31.47	31.32	38.14	29.59	15.42	8.80	7.67	14.42	9.73	9.89
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.24	0.29	0.10	0.09	0.49	0.30	0.16	1.62	1.02	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

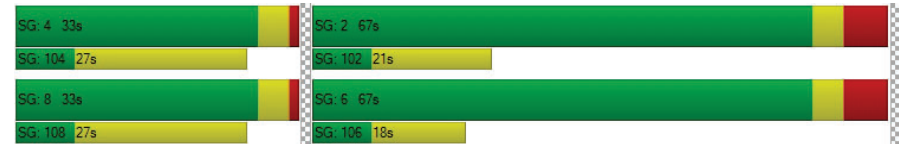
X, volume / capacity	0.50	0.44	0.43	0.14	0.22	0.09	0.27	0.07	0.31	0.40	0.42
d, Delay for Lane Group [s/veh]	38.06	31.71	31.62	38.24	29.69	15.91	9.10	7.83	16.04	10.75	11.08
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.23	4.22	3.09	0.69	1.79	0.44	2.91	0.55	2.17	5.15	5.10
50th-Percentile Queue Length [ft/ln]	80.77	105.57	77.35	17.28	44.64	11.12	72.78	13.75	54.21	128.72	127.47
95th-Percentile Queue Length [veh/ln]	5.82	7.59	5.57	1.24	3.21	0.80	5.24	0.99	3.90	8.87	8.80
95th-Percentile Queue Length [ft/ln]	145.38	189.82	139.23	31.10	80.35	20.01	131.00	24.75	97.58	221.76	220.05

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.06	31.71	31.62	38.24	29.69	29.69	15.91	9.10	7.83	16.04	10.89	11.08
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	33.47			31.84			9.29			11.63		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	16.65											
Intersection LOS	B											
Intersection V/C	0.382											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 21.7
Level Of Service: C
Volume to Capacity (v/c): 0.430

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	120	390	80	60	130	40	30	190	30	40	280	70
Base Volume Input [veh/h]	120	390	80	60	130	40	30	190	30	40	280	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	390	80	60	130	40	30	190	30	40	280	70
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	106	22	18	38	12	9	55	9	12	84	21
Total Analysis Volume [veh/h]	131	425	87	71	154	47	35	220	35	48	337	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No				No
Maximum Recall		No			No			No				No
Pedestrian Recall		No			No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	60	60	60	60	60	31	31
g / C, Green / Cycle	0.60	0.60	0.60	0.60	0.60	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.14	0.15	0.08	0.11	0.21	0.28
s, saturation flow rate [veh/h]	1148	1900	1717	889	1757	1410	1648
c, Capacity [veh/h]	680	1144	1033	528	1057	472	544
d1, Uniform Delay [s]	12.48	9.17	9.25	12.84	8.92	28.77	33.41
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.47	0.55	0.53	0.40	1.31	5.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

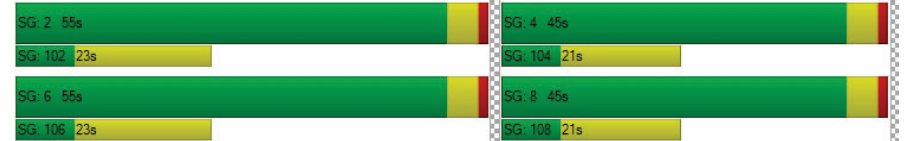
X, volume / capacity	0.19	0.23	0.24	0.13	0.19	0.61	0.86
d, Delay for Lane Group [s/veh]	13.11	9.64	9.80	13.37	9.32	30.08	38.62
Lane Group LOS	B	A	A	B	A	C	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.59	2.57	2.48	0.88	1.92	5.76	11.37
50th-Percentile Queue Length [ft/ln]	39.81	64.32	61.89	22.00	48.03	143.95	284.24
95th-Percentile Queue Length [veh/ln]	2.87	4.63	4.46	1.58	3.46	9.69	16.90
95th-Percentile Queue Length [ft/ln]	71.66	115.77	111.40	39.61	86.45	242.33	422.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.11	9.70	9.80	13.37	9.32	9.32	30.08	30.08	30.08	38.62	38.62	38.62
Movement LOS	B	A	A	B	A	A	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	10.41			10.38			30.08			38.62		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	21.71											
Intersection LOS	C											
Intersection V/C	0.430											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.391

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	100	430	40	100	130	50	30	400	30	40	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	430	40	100	130	50	30	400	30	40	370	80
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8552	0.8552	0.8552	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	123	11	28	37	14	9	117	9	12	116	25
Total Analysis Volume [veh/h]	114	490	46	113	147	56	35	468	35	50	462	100
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.15	0.13	0.12	0.04	0.13	0.14	0.06	0.24	0.07
s, saturation flow rate [veh/h]	1148	1900	1785	868	1708	935	1900	1805	880	1900	1401
c, Capacity [veh/h]	273	556	523	200	500	466	1093	1038	502	1093	806
d1, Uniform Delay [s]	37.79	29.16	29.34	41.81	28.36	17.41	10.41	10.47	13.86	11.92	9.72
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.25	0.28	0.94	0.20	0.31	0.50	0.55	0.40	1.20	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

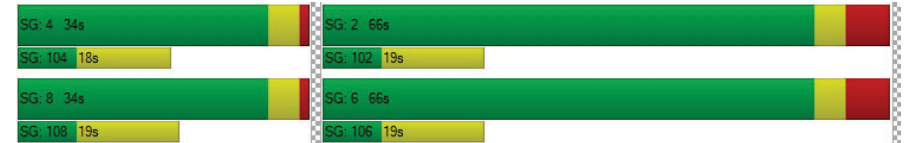
X, volume / capacity	0.42	0.49	0.51	0.57	0.41	0.08	0.23	0.24	0.10	0.42	0.12
d, Delay for Lane Group [s/veh]	38.17	29.41	29.62	42.74	28.56	17.72	10.91	11.01	14.25	13.12	10.03
Lane Group LOS	D	C	C	D	C	B	B	B	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.53	5.27	5.17	2.72	3.83	0.52	2.77	2.74	0.66	5.81	1.03
50th-Percentile Queue Length [ft/ln]	63.37	131.84	129.20	68.11	95.83	13.02	69.17	68.38	16.39	145.28	25.79
95th-Percentile Queue Length [veh/ln]	4.56	9.04	8.90	4.90	6.90	0.94	4.98	4.92	1.18	9.76	1.86
95th-Percentile Queue Length [ft/ln]	114.07	225.99	222.41	122.59	172.49	23.43	124.51	123.09	29.50	244.12	46.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.17	29.50	29.62	42.74	28.56	28.56	17.72	10.96	11.01	14.25	13.12	10.03
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	31.03			33.63			11.40			12.71		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.13											
Intersection LOS	C											
Intersection V/C	0.391											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 21.3
Level Of Service: C
Volume to Capacity (v/c): 0.405

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	Base Volume Input [veh/h]	80	540	60	0	90	100	110	370	30	30	390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	540	60	0	90	100	110	370	30	30	390	70
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	142	16	0	25	28	29	98	8	8	108	19
Total Analysis Volume [veh/h]	84	567	63	0	100	111	117	394	32	33	431	77
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	23	68	68	68	68	68
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.68	0.68	0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.18	0.00	0.13	0.12	0.23	0.03	0.23	0.05
s, saturation flow rate [veh/h]	1162	1900	1769	809	1612	957	1855	960	1900	1446
c, Capacity [veh/h]	186	440	410	113	373	607	1255	607	1285	978
d1, Uniform Delay [s]	43.86	35.51	35.79	0.00	33.97	11.07	6.79	10.14	6.77	5.53
k, delay calibration	0.04	0.04	0.05	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	0.87	1.45	0.00	0.50	0.71	0.74	0.17	0.70	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.73	0.76	0.00	0.57	0.19	0.34	0.05	0.34	0.08
d, Delay for Lane Group [s/veh]	44.50	36.38	37.25	0.00	34.47	11.78	7.53	10.31	7.48	5.69
Lane Group LOS	D	D	D	A	C	B	A	B	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.02	7.13	7.02	0.00	4.48	1.33	3.50	0.34	3.52	0.52
50th-Percentile Queue Length [ft/ln]	50.55	178.37	175.54	0.00	112.08	33.37	87.40	8.54	87.94	12.98
95th-Percentile Queue Length [veh/ln]	3.64	11.52	11.37	0.00	7.96	2.40	6.29	0.62	6.33	0.93
95th-Percentile Queue Length [ft/ln]	90.99	287.88	284.18	0.00	198.89	60.06	157.32	15.38	158.29	23.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.50	36.76	37.25	0.00	34.47	34.47	11.78	7.53	7.53	10.31	7.48	5.69
Movement LOS	D	D	D	A	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	37.71		34.47			8.45			7.39			
Approach LOS	D		C			A			A			
d_I, Intersection Delay [s/veh]	21.30											
Intersection LOS	C											
Intersection V/C	0.405											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 23.9
 Level Of Service: C
 Volume to Capacity (v/c): 0.427

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	610	80	40	10	80	0	0	0	6	250	50
Base Volume Input [veh/h]	14	610	80	40	10	80	0	0	0	6	250	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	610	80	40	10	80	0	0	0	6	250	50
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	168	22	12	3	24	0	0	0	2	83	17
Total Analysis Volume [veh/h]	15	671	88	47	12	94	0	0	0	6	331	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	40	40	5	49	40
g / C, Green / Cycle	0.40	0.40	0.05	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.19	0.07	0.03	0.07	0.22
s, saturation flow rate [veh/h]	3618	1344	1810	1578	1838
c, Capacity [veh/h]	1431	532	93	778	745
d1, Uniform Delay [s]	22.40	19.53	46.19	13.78	22.56
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.10	0.67	1.60	0.36	2.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

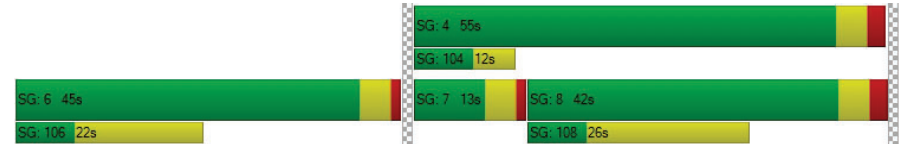
X, volume / capacity	0.47	0.17	0.51	0.14	0.53
d, Delay for Lane Group [s/veh]	23.51	20.20	47.79	14.14	25.28
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.94	1.41	1.16	1.32	7.48
50th-Percentile Queue Length [ft/ln]	148.42	35.15	29.06	33.10	186.89
95th-Percentile Queue Length [veh/ln]	9.93	2.53	2.09	2.38	11.96
95th-Percentile Queue Length [ft/ln]	248.32	63.27	52.32	59.58	298.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	23.51	20.20	47.79	14.14	14.14	0.00	0.00	0.00	0.00	25.28	25.28
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		23.12		24.48		0.00				25.28		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		23.94										
Intersection LOS		C										
Intersection V/C		0.427										

Sequence

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



Intersection Level Of Service Report
Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 19.9
Level Of Service: B
Volume to Capacity (v/c): 0.458

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	20	200	60	40	120	30	30	260	100	60	280	40
Base Volume Input [veh/h]	20	200	60	40	120	30	30	260	100	60	280	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	200	60	40	120	30	30	260	100	60	280	40
Peak Hour Factor	0.8796	0.8796	0.8796	0.8333	0.8333	0.8333	0.9034	0.9034	0.9034	0.8483	0.8483	0.8483
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	57	17	12	36	9	8	72	28	18	83	12
Total Analysis Volume [veh/h]	23	227	68	48	144	36	33	288	111	71	330	47
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	21	21	70	70	70
g / C, Green / Cycle	0.21	0.21	0.70	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.19	0.20	0.25	0.26	0.03
s, saturation flow rate [veh/h]	1672	1169	1733	1526	1574
c, Capacity [veh/h]	392	291	1246	1106	1097
d1, Uniform Delay [s]	38.08	37.15	6.05	5.83	4.74
k, delay calibration	0.08	0.09	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.04	4.00	0.76	0.92	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.78	0.35	0.36	0.04
d, Delay for Lane Group [s/veh]	41.12	41.15	6.82	6.75	4.81
Lane Group LOS	D	D	A	A	A
Critical Lane Group	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.68	5.58	3.29	2.99	0.28
50th-Percentile Queue Length [ft/ln]	191.98	139.38	82.28	74.72	7.01
95th-Percentile Queue Length [veh/ln]	12.22	9.45	5.92	5.38	0.50
95th-Percentile Queue Length [ft/ln]	305.59	236.19	148.10	134.50	12.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.12	41.12	41.12	41.15	41.15	41.15	6.82	6.82	6.82	6.75	6.75	4.81
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	41.12			41.15			6.82			6.55		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.87											
Intersection LOS	B											
Intersection V/C	0.458											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.499

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	20	140	30	150	90	40	30	510	20	60	440	40
Base Volume Input [veh/h]	20	140	30	150	90	40	30	510	20	60	440	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	140	30	150	90	40	30	510	20	60	440	40
Peak Hour Factor	0.8437	0.8437	0.8437	0.7884	0.7884	0.7884	0.9314	0.9314	0.9314	0.9359	0.9359	0.9359
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	41	9	48	29	13	8	137	5	16	118	11
Total Analysis Volume [veh/h]	24	166	36	190	114	51	32	548	21	64	470	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	27	27	27	27	59	59	59	59	59	59
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.59	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.18	0.10	0.04	0.32	0.02	0.08	0.27	0.03
s, saturation flow rate [veh/h]	1090	1640	1066	1583	843	1710	1369	785	1710	1345
c, Capacity [veh/h]	258	450	235	434	423	1015	812	370	1015	798
d1, Uniform Delay [s]	35.15	30.00	43.38	29.36	17.69	12.14	8.38	20.99	11.37	8.52
k, delay calibration	0.04	0.04	0.13	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.26	7.47	0.20	0.35	2.06	0.06	1.02	1.52	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.45	0.81	0.38	0.08	0.54	0.03	0.17	0.46	0.05
d, Delay for Lane Group [s/veh]	35.20	30.26	50.85	29.57	18.03	14.20	8.44	22.00	12.89	8.65
Lane Group LOS	D	C	D	C	B	B	A	C	B	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.49	3.96	5.17	3.16	0.48	7.35	0.19	1.10	5.87	0.40
50th-Percentile Queue Length [ft/ln]	12.33	98.95	129.29	79.09	12.09	183.72	4.81	27.61	146.70	10.03
95th-Percentile Queue Length [veh/ln]	0.89	7.12	8.90	5.69	0.87	11.79	0.35	1.99	9.84	0.72
95th-Percentile Queue Length [ft/ln]	22.19	178.12	222.53	142.35	21.76	294.86	8.65	49.71	246.01	18.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.20	30.26	30.26	50.85	29.57	29.57	18.03	14.20	8.44	22.00	12.89	8.65
Movement LOS	D	C	C	D	C	C	B	A	C	B	A	A
d_A, Approach Delay [s/veh]	30.78			40.96			14.20			13.59		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.53											
Intersection LOS	C											
Intersection V/C	0.499											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.410

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	60	190	20	40	250	10	20	250	40	30	310	40
Base Volume Input [veh/h]	60	190	20	40	250	10	20	250	40	30	310	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	190	20	40	250	10	20	250	40	30	310	40
Peak Hour Factor	0.9166	0.9166	0.9166	0.8625	0.8625	0.8625	0.8118	0.8118	0.8118	0.8521	0.8521	0.8521
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	52	5	12	72	3	6	77	12	9	91	12
Total Analysis Volume [veh/h]	65	207	22	46	290	12	25	308	49	35	364	47
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	65	65	65
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.12	0.04	0.16	0.18	0.03	0.25
s, saturation flow rate [veh/h]	1080	1855	1159	1875	1820	1571	1791
c, Capacity [veh/h]	161	473	212	478	1228	1026	1209
d1, Uniform Delay [s]	44.79	31.67	40.21	33.08	7.29	6.21	7.91
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	0.29	0.19	0.52	0.54	0.09	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.48	0.22	0.63	0.27	0.05	0.37
d, Delay for Lane Group [s/veh]	45.40	31.95	40.40	33.60	7.84	6.29	8.78
Lane Group LOS	D	C	D	C	A	A	A
Critical Lane Group	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.61	4.75	1.05	6.57	2.81	0.35	4.11
50th-Percentile Queue Length [ft/ln]	40.17	118.83	26.34	164.16	70.35	8.86	102.78
95th-Percentile Queue Length [veh/ln]	2.89	8.33	1.90	10.77	5.07	0.64	7.40
95th-Percentile Queue Length [ft/ln]	72.31	208.22	47.41	269.22	126.63	15.94	185.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.40	31.95	31.95	40.40	33.60	33.60	7.84	7.84	6.29	8.78	8.78	8.78
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.92			34.50			7.64			8.78		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	19.80											
Intersection LOS	B											
Intersection V/C	0.410											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 19.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.416

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	30	190	20	130	120	50	20	610	40	30	490	70
Base Volume Input [veh/h]	30	190	20	130	120	50	20	610	40	30	490	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	190	20	130	120	50	20	610	40	30	490	70
Peak Hour Factor	0.8983	0.8983	0.8983	0.7948	0.7948	0.7948	0.9768	0.9768	0.9768	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	53	6	41	38	16	5	156	10	8	130	19
Total Analysis Volume [veh/h]	33	212	22	164	151	63	20	624	41	32	521	74
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.14	0.12	0.02	0.18	0.18	0.04	0.27	0.05
s, saturation flow rate [veh/h]	1174	1861	1156	1781	893	1900	1847	779	1900	1548
c, Capacity [veh/h]	261	526	252	503	439	1112	1081	444	1112	906
d1, Uniform Delay [s]	36.18	29.41	41.49	29.23	17.70	10.42	10.44	14.25	11.82	9.01
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.22	1.06	0.21	0.20	0.70	0.73	0.32	1.42	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.45	0.65	0.43	0.05	0.30	0.30	0.07	0.47	0.08
d, Delay for Lane Group [s/veh]	36.26	29.63	42.55	29.44	17.90	11.12	11.17	14.56	13.24	9.19
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.71	4.65	4.04	4.22	0.30	3.74	3.68	0.43	6.64	0.72
50th-Percentile Queue Length [ft/ln]	17.64	116.16	101.03	105.58	7.49	93.54	92.03	10.69	166.08	17.91
95th-Percentile Queue Length [veh/ln]	1.27	8.18	7.27	7.59	0.54	6.73	6.63	0.77	10.87	1.29
95th-Percentile Queue Length [ft/ln]	31.76	204.54	181.86	189.84	13.48	168.37	165.65	19.25	271.75	32.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.26	29.63	29.63	42.55	29.44	29.44	17.90	11.14	11.17	14.56	13.24	9.19
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	30.45			35.13			11.34			12.83		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	19.02											
Intersection LOS	B											
Intersection V/C	0.416											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.438

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Base Volume Input [veh/h]	200	380	270	40	190	40	20	600	130	140	770	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	380	270	40	190	40	20	600	130	140	770	40
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	101	71	12	59	12	5	157	34	37	205	11
Total Analysis Volume [veh/h]	212	402	286	50	236	50	21	629	136	149	820	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.16	0.21	0.19	0.05	0.08	0.08	0.03	0.17	0.09	0.15	0.23	0.03
s, saturation flow rate [veh/h]	1309	1900	1525	983	1900	1752	668	3618	1487	981	3618	1443
c, Capacity [veh/h]	494	670	538	108	442	408	266	1592	655	558	2008	801
d1, Uniform Delay [s]	24.01	26.56	25.77	48.68	31.88	32.00	25.93	18.98	17.25	11.62	12.80	10.20
k, delay calibration	0.43	0.09	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.37	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.32	0.74	0.30	1.15	0.16	0.19	0.58	0.74	0.72	0.88	0.62	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.60	0.53	0.46	0.33	0.34	0.08	0.40	0.21	0.27	0.41	0.05
d, Delay for Lane Group [s/veh]	26.33	27.30	26.08	49.83	32.04	32.19	26.51	19.71	17.97	12.49	13.42	10.33
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.94	7.83	5.35	1.27	2.89	2.80	0.41	4.99	2.03	1.64	5.08	0.44
50th-Percentile Queue Length [ft/ln]	98.49	195.66	133.83	31.70	72.15	69.97	10.18	124.76	50.73	40.99	127.06	10.97
95th-Percentile Queue Length [veh/ln]	7.09	12.41	9.15	2.28	5.19	5.04	0.73	8.65	3.65	2.95	8.78	0.79
95th-Percentile Queue Length [ft/ln]	177.27	310.36	228.70	57.05	129.87	125.95	18.33	216.36	91.31	73.79	219.49	19.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.33	27.30	26.08	49.83	32.10	32.19	26.51	19.71	17.97	12.49	13.42	10.33
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	26.68			34.75			19.59			13.15		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.23											
Intersection LOS	C											
Intersection V/C	0.438											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 58.7
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.898

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TT			TT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	150	810	60	20	470	40	10	150	130	60	190	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	810	60	20	470	40	10	150	130	60	190	50
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	213	16	6	139	12	3	40	35	16	52	14
Total Analysis Volume [veh/h]	158	854	63	24	557	47	11	159	138	66	208	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6	6
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18	18
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No	
Maximum Recall	No	No		No	No			No				No	
Pedestrian Recall	No	No		No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	55	55	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.55	0.55	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.16	0.24	0.25	0.03	0.16	0.16	0.15	0.09	0.65	0.04
s, saturation flow rate [veh/h]	976	1900	1835	732	1900	1829	1134	1461	425	1508
c, Capacity [veh/h]	652	1054	1017	483	987	951	348	399	161	412
d1, Uniform Delay [s]	7.82	13.12	13.17	7.85	13.74	13.78	29.64	29.18	33.37	27.42
k, delay calibration	0.43	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	1.34	1.41	0.19	0.82	0.86	0.40	0.19	342.77	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

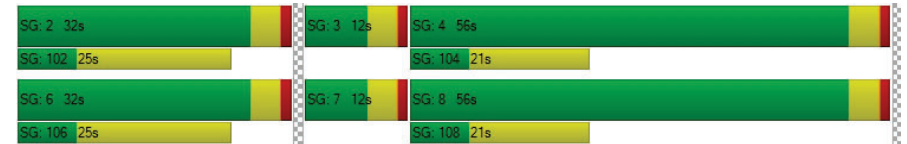
X, volume / capacity	0.24	0.44	0.45	0.05	0.31	0.31	0.49	0.35	1.71	0.13
d, Delay for Lane Group [s/veh]	8.57	14.46	14.58	8.04	14.56	14.64	30.03	29.37	376.14	27.47
Lane Group LOS	A	B	B	A	B	B	C	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.39	6.22	6.11	0.20	4.04	3.96	3.22	2.62	18.29	0.98
50th-Percentile Queue Length [ft/ln]	34.85	155.51	152.76	5.07	100.89	98.99	80.62	65.55	457.18	24.51
95th-Percentile Queue Length [veh/ln]	2.51	10.31	10.16	0.37	7.26	7.13	5.80	4.72	31.39	1.76
95th-Percentile Queue Length [ft/ln]	62.72	257.77	254.11	9.13	181.61	178.19	145.11	117.99	784.80	44.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.57	14.51	14.58	8.04	14.60	14.64	30.03	30.03	29.37	376.14	376.14	27.47
Movement LOS	A	B	B	A	B	B	C	C	C	F	F	C
d_A, Approach Delay [s/veh]	13.64			14.35			29.73			317.85		
Approach LOS	B			B			C			F		
d_I, Intersection Delay [s/veh]	58.72											
Intersection LOS	E											
Intersection V/C	0.898											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 34.5
Level Of Service: C
Volume to Capacity (v/c): 0.609

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	120	850	160	90	540	60	20	520	250	80	400	180
Base Volume Input [veh/h]	120	850	160	90	540	60	20	520	250	80	400	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	850	160	90	540	60	20	520	250	80	400	180
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	219	41	24	143	16	6	145	69	22	110	50
Total Analysis Volume [veh/h]	123	874	165	95	571	63	22	578	278	88	441	198
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	0.00	2.60	2.60	0.00
g_i, Effective Green Time [s]	54	43	43	54	43	43	25	25	25	36	36	36
g / C, Green / Cycle	0.54	0.43	0.43	0.54	0.43	0.43	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.28	0.29	0.12	0.17	0.17	0.02	0.24	0.26	0.09	0.23	0.14
s, saturation flow rate [veh/h]	978	1900	1761	762	1900	1807	961	1900	1563	942	1900	1453
c, Capacity [veh/h]	548	825	765	399	820	780	107	480	395	286	689	527
d1, Uniform Delay [s]	11.88	22.26	22.45	13.99	19.45	19.52	47.50	36.67	37.38	24.89	26.46	23.52
k, delay calibration	0.24	0.50	0.50	0.50	0.50	0.50	0.04	0.25	0.31	0.07	0.13	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	3.90	4.46	1.40	1.41	1.53	0.35	18.21	41.45	0.38	1.18	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

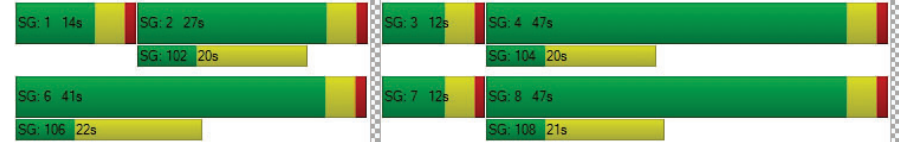
X, volume / capacity	0.22	0.65	0.66	0.24	0.39	0.40	0.21	0.94	1.02	0.31	0.64	0.38
d, Delay for Lane Group [s/veh]	12.33	26.16	26.92	15.39	20.86	21.04	47.84	54.88	78.83	25.27	27.63	23.69
Lane Group LOS	B	C	C	B	C	C	D	D	F	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.36	10.42	10.06	1.13	5.33	5.20	0.55	13.03	13.98	1.40	8.73	3.42
50th-Percentile Queue Length [ft/ln]	33.92	260.59	251.44	28.36	133.37	129.98	13.69	325.75	349.48	35.00	218.20	85.46
95th-Percentile Queue Length [veh/ln]	2.44	15.72	15.26	2.04	9.12	8.94	0.99	18.95	20.38	2.52	13.57	6.15
95th-Percentile Queue Length [ft/ln]	61.06	392.96	381.47	51.04	228.07	223.46	24.64	473.75	509.41	63.00	339.33	153.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.33	26.45	26.92	15.39	20.94	21.04	47.84	60.09	78.83	25.27	27.63	23.69
Movement LOS	B	C	C	B	C	C	D	E	E	C	C	C
d_A, Approach Delay [s/veh]	25.02			20.23			65.71			26.27		
Approach LOS	C			C			E			C		
d_I, Intersection Delay [s/veh]	34.50											
Intersection LOS	C											
Intersection V/C	0.609											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 33.6
Level Of Service: C
Volume to Capacity (v/c): 0.585

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	140	1000	150	60	810	30	70	250	120	120	280	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	1000	150	60	810	30	70	250	120	120	280	80
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	271	41	16	220	8	18	65	31	32	76	22
Total Analysis Volume [veh/h]	152	1084	163	65	881	33	72	259	124	129	302	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	10	51	51	37	37	37	26	26	26	35	35
g / C, Green / Cycle	0.10	0.51	0.51	0.37	0.37	0.37	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.08	0.33	0.35	0.14	0.24	0.25	0.07	0.14	0.09	0.32	0.06
s, saturation flow rate [veh/h]	1810	1900	1733	453	1900	1850	1094	1900	1352	1330	1366
c, Capacity [veh/h]	183	978	893	110	699	681	72	488	347	461	482
d1, Uniform Delay [s]	44.10	17.67	18.18	47.50	26.36	26.48	50.00	31.97	30.40	30.57	22.33
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.68	3.33	4.27	21.00	4.81	5.13	28.67	0.33	0.23	28.49	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

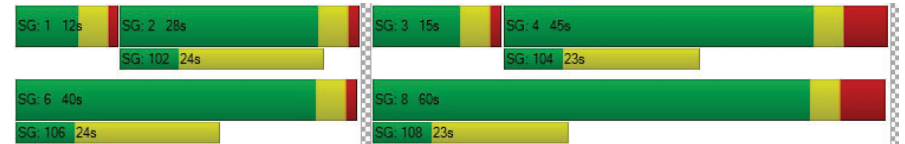
X, volume / capacity	0.83	0.65	0.69	0.59	0.66	0.67	0.99	0.53	0.36	0.94	0.18
d, Delay for Lane Group [s/veh]	47.78	21.00	22.44	68.50	31.17	31.61	78.67	32.30	30.63	59.05	22.40
Lane Group LOS	D	C	C	E	C	C	E	C	C	E	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.85	11.02	11.08	2.26	9.84	9.81	2.35	5.30	2.41	11.96	1.37
50th-Percentile Queue Length [ft/ln]	96.30	275.46	277.05	56.54	246.10	245.16	58.82	132.46	60.35	299.03	34.29
95th-Percentile Queue Length [veh/ln]	6.93	16.46	16.54	4.07	14.99	14.94	4.23	9.07	4.35	17.63	2.47
95th-Percentile Queue Length [ft/ln]	173.35	411.55	413.53	101.78	374.73	373.55	105.87	226.84	108.63	440.83	61.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.78	21.60	22.44	68.50	31.38	31.61	78.67	32.30	30.63	59.05	59.05	22.40
Movement LOS	D	C	C	E	C	C	E	C	C	E	E	C
d_A, Approach Delay [s/veh]	24.54			33.85			39.19			52.96		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.64											
Intersection LOS	C											
Intersection V/C	0.585											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 51.0
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.544

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	170	1240	50	40	920	30	6	80	140	66	150	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	1240	50	40	920	30	6	80	140	66	150	90
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	327	13	10	240	8	2	24	41	18	42	25
Total Analysis Volume [veh/h]	179	1308	53	42	959	31	7	95	165	70	169	101
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	32	32	5	26	26	40	40
g / C, Green / Cycle	0.12	0.35	0.35	0.05	0.29	0.29	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.10	0.36	0.36	0.02	0.26	0.26	0.16	0.15
s, saturation flow rate [veh/h]	1810	1900	1860	1810	1900	1864	1663	1764
c, Capacity [veh/h]	216	674	659	93	545	535	734	779
d1, Uniform Delay [s]	39.00	29.23	29.23	41.71	31.21	31.30	16.74	16.67
k, delay calibration	0.05	0.50	0.50	0.04	0.25	0.26	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.77	38.43	42.19	1.26	13.01	14.24	1.34	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

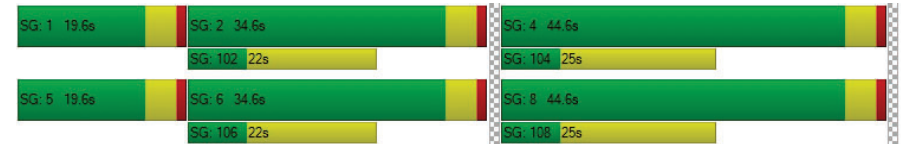
X, volume / capacity	0.83	1.01	1.03	0.45	0.91	0.92	0.35	0.35
d, Delay for Lane Group [s/veh]	42.77	67.66	71.42	42.97	44.21	45.53	18.08	17.89
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.05	21.11	21.36	0.93	12.12	12.18	3.70	3.81
50th-Percentile Queue Length [ft/ln]	101.29	527.84	533.96	23.35	302.92	304.50	92.61	95.34
95th-Percentile Queue Length [veh/ln]	7.29	28.95	29.48	1.68	17.83	17.90	6.67	6.86
95th-Percentile Queue Length [ft/ln]	182.33	723.66	737.05	42.03	445.63	447.59	166.70	171.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.77	69.46	71.42	42.97	44.85	45.53	0.00	18.08	18.08	0.00	17.89	17.89
Movement LOS	D	E	E	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	66.42		44.79		18.08		17.89					
Approach LOS	E		D		B		B					
d_I, Intersection Delay [s/veh]	50.95											
Intersection LOS	D											
Intersection V/C	0.544											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 43.7
 Level Of Service: D
 Volume to Capacity (v/c): 0.763

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	280	710	0	1230	40	0	0	0	0	640	280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	710	0	1230	40	0	0	0	0	640	280	880
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	204	0	324	11	0	0	0	0	176	77	242
Total Analysis Volume [veh/h]	322	816	0	1296	42	0	0	0	0	704	308	968
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.25	0.24	0.28	0.27	0.34	0.31
s, saturation flow rate [veh/h]	1810	3618	3618	1865	1810	1864	1432	1573
c, Capacity [veh/h]	337	2123	1310	675	609	627	482	529
d1, Uniform Delay [s]	48.26	13.21	32.38	32.06	36.65	36.22	39.78	38.12
k, delay calibration	0.37	0.50	0.50	0.50	0.30	0.28	0.45	0.37
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	31.95	0.53	2.88	5.02	7.89	6.17	40.01	18.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.38	0.68	0.66	0.83	0.81	1.00	0.91
d, Delay for Lane Group [s/veh]	80.22	13.74	35.25	37.08	44.54	42.39	79.79	56.35
Lane Group LOS	F	B	D	D	D	D	F	E
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.48	5.89	11.40	11.71	14.37	13.94	18.81	15.64
50th-Percentile Queue Length [ft/ln]	312.00	147.24	285.03	292.82	359.2	348.4	470.1	390.9
95th-Percentile Queue Length [veh/ln]	18.27	9.87	16.94	17.33	20.59	20.06	26.01	22.13
95th-Percentile Queue Length [ft/ln]	456.84	246.74	423.47	433.14	514.6	501.5	650.1	553.1

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.22	13.74	0.00	0.00	35.82	37.08	0.00	0.00	0.00	43.90	42.39	67.80
Movement LOS	F	B			D	D				D	D	E
d_A, Approach Delay [s/veh]	32.55		35.86		0.00		55.49					
Approach LOS	C		D		A		E					
d_I, Intersection Delay [s/veh]	43.74											
Intersection LOS	D											
Intersection V/C	0.763											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 30.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.568

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	800	320	560	1300	0	200	170	250	0	0	0	0
Base Volume Input [veh/h]	0	800	320	560	1300	0	200	170	250	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	800	320	560	1300	0	200	170	250	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	222	89	150	349	0	57	49	72	0	0	0
Total Analysis Volume [veh/h]	0	887	355	601	1396	0	229	195	287	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	28	28	28	54	87	24	24	24
g / C, Green / Cycle	0.23	0.23	0.23	0.45	0.73	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.17	0.21	0.21	0.17	0.39	0.13	0.11	0.18
s, saturation flow rate [veh/h]	3618	1513	1464	3514	3618	1810	1729	1577
c, Capacity [veh/h]	849	355	343	1593	2627	357	341	311
d1, Uniform Delay [s]	42.42	44.21	44.60	21.63	7.32	44.25	43.57	47.25
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.20
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	2.72	3.67	0.68	0.77	0.72	0.56	17.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.87	0.90	0.38	0.53	0.64	0.57	0.92
d, Delay for Lane Group [s/veh]	42.88	46.92	48.27	22.31	8.10	44.97	44.13	65.14
Lane Group LOS	D	D	D	C	A	D	D	E
Critical Lane Group	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.45	9.02	9.18	5.71	7.38	6.27	5.25	9.84
50th-Percentile Queue Length [ft/ln]	211.21	225.40	229.39	142.83	184.54	156.73	131.23	245.98
95th-Percentile Queue Length [veh/ln]	13.22	13.94	14.14	9.63	11.84	10.38	9.01	14.98
95th-Percentile Queue Length [ft/ln]	330.39	348.51	353.59	240.83	295.93	259.39	225.16	374.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	43.15	48.10	22.31	8.10	0.00	44.97	44.13	65.14	0.00	0.00	0.00
Movement LOS		D	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]		45.24		12.38		52.88		0.00				
Approach LOS		D		B		D		A				
d_I, Intersection Delay [s/veh]		30.00										
Intersection LOS		C										
Intersection V/C		0.568										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 61.1
Level Of Service: E
Volume to Capacity (v/c): 0.630

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	750	330	150	780	150	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	750	330	150	780	150	220
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	209	92	47	245	43	63
Total Analysis Volume [veh/h]	837	368	188	978	172	253
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
11, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
12, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.23	0.27	0.29	0.27	0.21	0.34
s, saturation flow rate [veh/h]	3618	1353	658	3618	832	734
c, Capacity [veh/h]	2509	938	453	2509	145	128
d1, Uniform Delay [s]	6.11	6.45	12.43	6.44	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.16	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	1.23	2.80	0.46	103.63	465.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.33	0.39	0.42	0.39	1.18	1.97
d, Delay for Lane Group [s/veh]	6.47	7.69	15.23	6.90	144.90	506.45
Lane Group LOS	A	A	B	A	F	F
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.19	3.16	2.67	3.93	7.67	19.64
50th-Percentile Queue Length [ft/ln]	79.66	79.09	66.80	98.19	191.75	490.95
95th-Percentile Queue Length [veh/ln]	5.74	5.69	4.81	7.07	13.11	33.30
95th-Percentile Queue Length [ft/ln]	143.39	142.36	120.24	176.74	327.72	832.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.47	7.69	15.23	6.90	144.90	506.45
Movement LOS	A	A	B	A	F	F
d_A, Approach Delay [s/veh]	6.84		8.24		360.13	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	61.13					
Intersection LOS	E					
Intersection V/C	0.630					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 18.5
Level Of Service: B
Volume to Capacity (v/c): 0.416

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	10	290	110	170	330	20	30	60	10	120	30	30
Base Volume Input [veh/h]	10	290	110	170	330	20	30	60	10	120	30	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	290	110	170	330	20	30	60	10	120	30	30
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	81	31	48	93	6	8	16	3	35	9	9
Total Analysis Volume [veh/h]	11	326	124	191	371	22	31	63	10	141	35	35
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	51	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.56	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.26	0.18	0.21	0.03	0.04	0.11	0.05
s, saturation flow rate [veh/h]	1062	1747	1074	1865	1039	1811	1290	1373
c, Capacity [veh/h]	664	904	635	1047	202	330	244	251
d1, Uniform Delay [s]	6.97	14.13	8.56	10.97	36.15	31.36	38.53	31.71
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	1.96	1.21	1.03	0.13	0.12	0.81	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

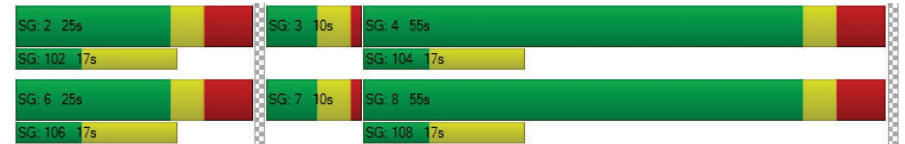
X, volume / capacity	0.02	0.50	0.30	0.38	0.15	0.22	0.58	0.28
d, Delay for Lane Group [s/veh]	6.98	16.08	9.77	11.99	36.28	31.48	39.34	31.93
Lane Group LOS	A	B	A	B	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.07	5.93	1.59	4.32	0.62	1.35	3.02	1.29
50th-Percentile Queue Length [ft/ln]	1.74	148.31	39.80	107.95	15.51	33.68	75.48	32.36
95th-Percentile Queue Length [veh/ln]	0.13	9.93	2.87	7.73	1.12	2.43	5.43	2.33
95th-Percentile Queue Length [ft/ln]	3.13	248.18	71.64	193.15	27.92	60.63	135.86	58.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.98	16.08	16.08	9.77	11.99	11.99	36.28	31.48	31.48	39.34	31.93	31.93
Movement LOS	A	B	B	A	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.87			11.27			32.91			36.88		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	18.46											
Intersection LOS	B											
Intersection V/C	0.416											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 16.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.584

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Northbound				Southbound				Eastbound				Westbound				
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Base Volume Input [veh/h]	40	0	950	140	270	1410	0	32	1085	209	90	0	120		
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total Hourly Volume [veh/h]	40	0	950	140	270	1410	0	32	1085	209	90	0	120			
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000			
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			
Total 15-Minute Volume [veh/h]	10	0	255	38	74	389	0	8	271	52	28	0	37			
Total Analysis Volume [veh/h]	40	0	1019	150	298	1555	0	32	1085	209	112	0	150			
Presence of On-Street Parking	No			No	No	No	No				No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0			
Pedestrian Volume [ped/h]	207				130				0				0			
Bicycle Volume [bicycles/h]	22				6				42				51			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	104	104	117	108	23	23
g / C, Green / Cycle	0.03	0.69	0.69	0.78	0.72	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.28	0.09	0.44	0.43	0.09	0.13
s, saturation flow rate [veh/h]	1810	3618	1584	682	3618	1231	1132
c, Capacity [veh/h]	52	2509	1099	536	2615	192	177
d1, Uniform Delay [s]	72.29	9.79	7.77	6.72	10.09	58.69	61.51
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.52	0.49	0.26	4.12	1.00	1.04	13.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.41	0.14	0.56	0.59	0.58	0.85
d, Delay for Lane Group [s/veh]	80.81	10.28	8.03	10.84	11.09	59.74	74.88
Lane Group LOS	F	B	A	B	B	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.66	7.17	1.71	2.82	12.16	4.03	6.24
50th-Percentile Queue Length [ft/ln]	41.50	179.21	42.84	70.39	303.95	100.77	155.89
95th-Percentile Queue Length [veh/ln]	2.99	11.56	3.08	5.07	17.88	7.26	10.33
95th-Percentile Queue Length [ft/ln]	74.70	288.98	77.11	126.70	446.92	181.38	258.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.81	0.00	10.28	8.03	10.84	11.09	0.00	0.00	0.00	0.00	59.74	0.00	74.88
Movement LOS	F		B	A	B	B					E		E
d_A, Approach Delay [s/veh]	12.34			11.05			0.00			68.40			
Approach LOS	B			B			A			E			
d_I, Intersection Delay [s/veh]	16.04												
Intersection LOS	B												
Intersection V/C	0.584												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 53.3
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.243

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	30	2130	2	380	2670	20	20	30	30	80	20	450
Base Volume Input [veh/h]	30	2130	2	380	2670	20	20	30	30	80	20	450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	2130	2	380	2670	20	20	30	30	80	20	450
Peak Hour Factor	0.8617	0.8617	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	618	1	97	683	5	8	12	12	24	6	135
Total Analysis Volume [veh/h]	35	2472	2	389	2731	20	32	48	48	96	24	542
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk		No			No			No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes		No	Yes			No			No	No	
Maximum Recall	No	No		No	No			No			No	No	
Pedestrian Recall	No	No		No	No			No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	213	213	213	213	213	213	213	213
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	6	103	50	147	147	45	45	100
g / C, Green / Cycle	0.03	0.48	0.24	0.69	0.69	0.21	0.21	0.47
(v / s)_i Volume / Saturation Flow Rate	0.02	0.48	0.21	0.50	0.50	0.55	0.21	0.34
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1893	233	563	1615
c, Capacity [veh/h]	51	2499	428	2498	1307	70	150	756
d1, Uniform Delay [s]	102.37	54.47	78.97	20.31	20.38	77.01	83.47	45.34
k, delay calibration	0.04	0.04	0.16	0.04	0.06	0.50	0.46	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.92	3.20	10.79	0.15	0.43	418.71	32.98	5.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

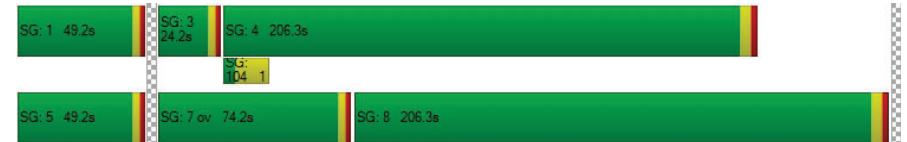
X, volume / capacity	0.69	0.99	0.91	0.72	0.72	1.82	0.80	0.72
d, Delay for Lane Group [s/veh]	108.29	57.68	89.76	20.46	20.81	495.72	116.45	51.13
Lane Group LOS	F	E	F	C	C	F	F	D
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.01	43.33	21.87	26.52	28.07	12.14	8.07	24.69
50th-Percentile Queue Length [ft/ln]	50.14	1083.26	546.64	663.09	701.65	303.43	201.65	617.24
95th-Percentile Queue Length [veh/ln]	3.61	54.13	29.53	34.97	36.75	21.81	12.72	32.84
95th-Percentile Queue Length [ft/ln]	90.25	1353.15	738.36	874.24	918.85	545.20	318.09	820.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	108.29	57.68	0.00	89.76	20.58	20.81	495.72	495.72	495.72	116.45	116.45	51.13
Movement LOS	F	E		F	C	C	F	F	F	F	F	D
d_A, Approach Delay [s/veh]	58.38		29.15			495.72			62.97			
Approach LOS	E		C			F			E			
d_I, Intersection Delay [s/veh]	53.29											
Intersection LOS	D											
Intersection V/C	1.243											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 232.7
Level Of Service: F
Volume to Capacity (v/c): 1.949

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	390	500	90	40	420	110	100	100	230	0	40	160	90
Base Volume Input [veh/h]	390	500	90	40	420	110	100	100	230	0	40	160	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	390	500	90	40	420	110	100	100	230	0	40	160	90
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	104	133	24	11	120	31	27	27	63	0	13	50	28
Total Analysis Volume [veh/h]	416	533	96	46	480	126	110	110	252	0	50	201	113
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	60	60	4	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.60	0.60	0.04	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.23	0.28	0.08	0.03	0.25	0.09	1.47	0.17	0.54	0.13
s, saturation flow rate [veh/h]	1810	1900	1264	1810	1900	1352	150	1518	462	860
c, Capacity [veh/h]	189	1142	760	65	1012	720	82	570	129	159
d1, Uniform Delay [s]	44.75	11.05	8.60	47.68	14.62	12.05	46.83	23.37	39.32	38.21
k, delay calibration	0.50	0.50	0.50	0.04	0.50	0.50	0.50	0.05	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	557.68	1.37	0.34	5.28	1.60	0.53	794.09	0.24	455.22	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

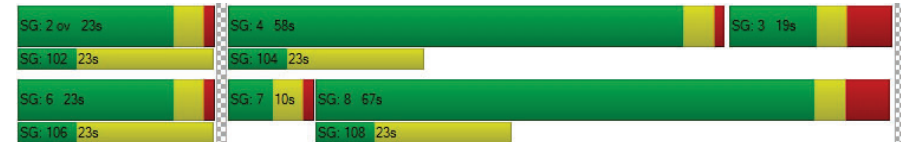
X, volume / capacity	2.20	0.47	0.13	0.71	0.47	0.18	2.69	0.44	1.95	0.71
d, Delay for Lane Group [s/veh]	602.43	12.42	8.95	52.96	16.21	12.58	840.92	23.61	494.54	40.40
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	33.91	6.50	0.92	1.22	6.92	1.51	20.09	4.48	19.43	2.64
50th-Percentile Queue Length [ft/ln]	847.74	162.39	23.06	30.56	173.02	37.66	502.33	112.03	485.86	65.96
95th-Percentile Queue Length [veh/ln]	53.34	10.68	1.66	2.20	11.24	2.71	34.95	7.95	33.06	4.75
95th-Percentile Queue Length [ft/ln]	1333.51	266.88	41.50	55.01	280.88	67.78	873.80	198.82	826.53	118.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	602.43	12.42	8.95	52.96	16.21	12.58	840.92	840.92	23.61	494.5	494.5	494.5	40.40
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	246.98		18.10			404.56			353.56				
Approach LOS	F		B			F			F				
d_I, Intersection Delay [s/veh]	232.74												
Intersection LOS	F												
Intersection V/C	1.949												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 64.6
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.449

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	580	200	80	660	340	390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	580	200	80	660	340	390
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	157	54	21	174	98	112
Total Analysis Volume [veh/h]	628	216	84	696	391	449
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.17	0.16	0.09	0.19	0.22	0.17	0.26
s, saturation flow rate [veh/h]	3618	1372	939	3618	1299	1681	1064
c, Capacity [veh/h]	2113	802	686	2509	226	293	186
d1, Uniform Delay [s]	10.46	10.26	5.38	5.81	41.27	40.84	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.32	0.13	0.43
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	0.83	0.37	0.28	144.06	17.36	235.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

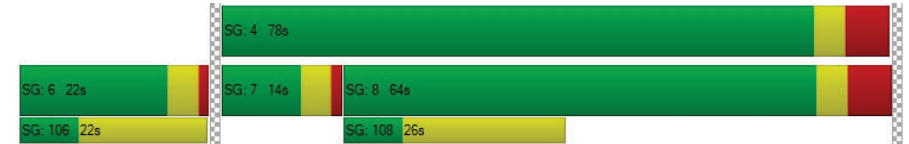
X, volume / capacity	0.30	0.27	0.12	0.28	1.27	0.95	1.47
d, Delay for Lane Group [s/veh]	10.82	11.09	5.75	6.09	185.33	58.20	276.56
Lane Group LOS	B	B	A	A	F	E	F
Critical Lane Group	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.40	2.40	0.56	2.52	14.56	8.11	16.63
50th-Percentile Queue Length [ft/ln]	84.88	60.08	14.12	62.94	364.04	202.63	415.87
95th-Percentile Queue Length [veh/ln]	6.11	4.33	1.02	4.53	23.16	12.77	27.17
95th-Percentile Queue Length [ft/ln]	152.78	108.14	25.41	113.29	578.94	319.36	679.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.82	11.09	5.75	6.09	150.17	193.32
Movement LOS	B	B	A	A	F	F
d_A, Approach Delay [s/veh]	10.89		6.05		172.82	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	64.56					
Intersection LOS	E					
Intersection V/C	0.449					

Sequence

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



Intersection Level Of Service Report

Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.362

Intersection Setup

Name	Ocean Ave		Ocean Ave			Arizona Ave		
	Northbound		Southbound			Westbound		
Approach								
Lane Configuration						T		
Turning Movement	Thru	Right	U-turn	Left	Thru	U-turn	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00			35.00		
Grade [%]	0.00		0.00			0.00		
Crosswalk	Yes		Yes			Yes		

Volumes

Name	Ocean Ave		Ocean Ave			Arizona Ave		
	740	190	0	120	760	0	120	80
Base Volume Input [veh/h]	740	190	0	120	760	0	120	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	740	190	0	120	760	0	120	80
Peak Hour Factor	0.9093	0.9093	1.0000	0.9413	0.9413	1.0000	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	203	52	0	32	202	0	35	24
Total Analysis Volume [veh/h]	814	209	0	127	807	0	142	94
Presence of On-Street Parking	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389			253		
Bicycle Volume [bicycles/h]	6		7			22		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	4	4	0	6	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	Lag	-	-	Lag	-
Minimum Green [s]	7	7	0	7	7	0	7	7
Maximum Green [s]	30	30	0	30	30	0	25	25
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	5.0	5.0	0.0	5.0	5.0	0.0	1.0	1.0
Split [s]	69	69	0	69	69	0	31	31
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	7	7	0	0	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	0	0	18	18
Rest in Walk	No				No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	0.0	6.6	6.6	0.0	2.6	2.6
Minimum Recall	Yes				Yes		No	
Maximum Recall	No				No		No	
Pedestrian Recall	No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.23	0.16	0.19	0.22	0.14
s, saturation flow rate [veh/h]	3618	1339	677	3618	1727
c, Capacity [veh/h]	2236	827	399	2236	431
d1, Uniform Delay [s]	9.40	8.64	16.41	9.38	32.55
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.73	2.09	0.45	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.25	0.32	0.36	0.55
d, Delay for Lane Group [s/veh]	9.86	9.37	18.51	9.83	32.95
Lane Group LOS	A	A	B	A	C
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.19	2.08	2.02	4.15	4.89
50th-Percentile Queue Length [ft/ln]	104.86	51.98	50.56	103.69	122.29
95th-Percentile Queue Length [veh/ln]	7.55	3.74	3.64	7.47	8.52
95th-Percentile Queue Length [ft/ln]	188.74	93.57	91.00	186.64	212.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.86	9.37	18.51	18.51	9.83	32.95	32.95	32.95
Movement LOS	A	A	B	B	A	C	C	C
d_A, Approach Delay [s/veh]	9.76		11.01		32.95			
Approach LOS	A		B		C			
d_I, Intersection Delay [s/veh]	12.79							
Intersection LOS	B							
Intersection V/C	0.362							

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 37.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.512

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	780	250	130	780	180	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	250	130	780	180	120
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	220	70	37	223	50	33
Total Analysis Volume [veh/h]	879	282	149	891	198	132
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.24	0.22	0.19	0.25	0.24	0.11
s, saturation flow rate [veh/h]	3618	1296	800	3618	832	1238
c, Capacity [veh/h]	2190	785	607	2618	120	325
d1, Uniform Delay [s]	10.28	9.95	5.18	5.06	42.78	30.42
k, delay calibration	0.50	0.50	0.50	0.50	0.37	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	1.28	0.96	0.35	318.17	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

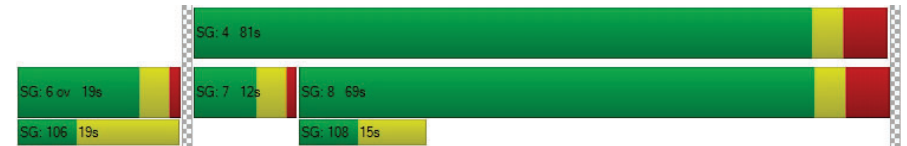
X, volume / capacity	0.40	0.36	0.25	0.34	1.65	0.41
d, Delay for Lane Group [s/veh]	10.83	11.23	6.14	5.42	360.95	30.73
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.87	3.20	0.94	2.96	13.54	2.62
50th-Percentile Queue Length [ft/ln]	121.64	79.91	23.48	73.93	338.55	65.62
95th-Percentile Queue Length [veh/ln]	8.48	5.75	1.69	5.32	23.09	4.72
95th-Percentile Queue Length [ft/ln]	212.08	143.83	42.27	133.08	577.18	118.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.83	11.23	6.14	5.42	360.95	30.73
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.93		5.52		228.86	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	37.12					
Intersection LOS	D					
Intersection V/C	0.512					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	46.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	10	1050	142	67	890	30	0	13	60	310	50	210
Base Volume Input [veh/h]	10	1050	142	67	890	30	0	13	60	310	50	210
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	1050	142	67	890	30	0	13	60	310	50	210
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	294	41	18	234	8	0	6	18	87	14	59
Total Analysis Volume [veh/h]	11	1178	165	71	935	32	0	24	70	348	56	236
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	75	75	68	68	8	32	32
g / C, Green / Cycle	0.50	0.50	0.46	0.46	0.05	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.25	0.26	0.04	0.22	0.17
s, saturation flow rate [veh/h]	663	3618	1900	1874	1615	1822	1397
c, Capacity [veh/h]	291	1806	867	855	86	392	301
d1, Uniform Delay [s]	21.65	27.87	29.74	29.88	70.24	58.85	55.58
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.46	0.25
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	1.85	2.58	2.70	6.72	51.52	9.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

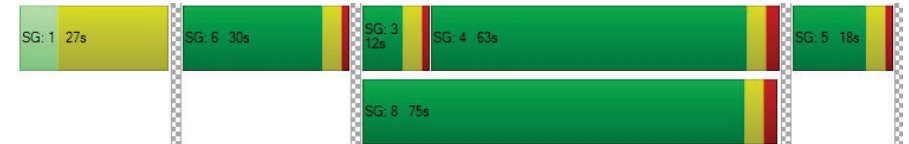
X, volume / capacity	0.04	0.65	0.56	0.57	0.81	1.03	0.79
d, Delay for Lane Group [s/veh]	21.67	29.72	32.32	32.59	76.96	110.37	65.37
Lane Group LOS	C	C	C	C	E	F	E
Critical Lane Group	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.20	16.17	13.45	13.53	2.82	20.60	9.34
50th-Percentile Queue Length [ft/ln]	5.02	404.33	336.24	338.29	70.48	515.03	233.60
95th-Percentile Queue Length [veh/ln]	0.36	22.77	19.46	19.56	5.07	28.55	14.36
95th-Percentile Queue Length [ft/ln]	9.03	569.21	486.60	489.11	126.86	713.67	358.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.67	29.72	0.00	0.00	32.45	32.59	76.96	0.00	76.96	110.37	110.37	65.37
Movement LOS	C	C			C	C	E		E	F	F	E
d_A, Approach Delay [s/veh]	29.64		32.45			76.96		93.78				
Approach LOS	C		C			E		F				
d_I, Intersection Delay [s/veh]	46.07											
Intersection LOS	D											
Intersection V/C	0.591											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized Delay (sec / veh): 31.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.558

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	360	900	870	200	240	700
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	900	870	200	240	700
Peak Hour Factor	0.9529	0.9529	0.9745	0.9745	0.9595	0.9595
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	236	223	51	63	182
Total Analysis Volume [veh/h]	378	944	893	205	250	730
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	71	71	71	20	40
g / C, Green / Cycle	0.13	0.59	0.59	0.59	0.17	0.33
(v / s)_i Volume / Saturation Flow Rate	0.11	0.26	0.25	0.16	0.19	0.26
s, saturation flow rate [veh/h]	3514	3618	3618	1316	1322	2859
c, Capacity [veh/h]	442	2131	2131	775	225	956
d1, Uniform Delay [s]	51.35	13.71	13.45	12.00	49.75	35.68
k, delay calibration	0.04	0.50	0.50	0.50	0.34	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.88	0.67	0.61	0.83	82.48	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

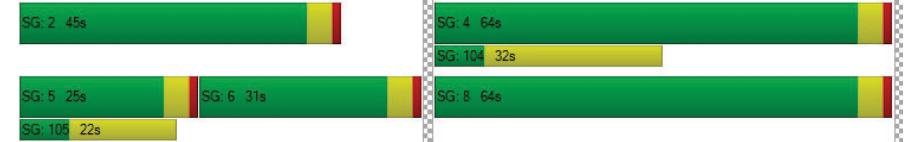
X, volume / capacity	0.86	0.44	0.42	0.26	1.11	0.76
d, Delay for Lane Group [s/veh]	53.24	14.38	14.06	12.83	132.23	36.17
Lane Group LOS	D	B	B	B	F	D
Critical Lane Group	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.67	7.10	6.59	2.80	12.24	10.18
50th-Percentile Queue Length [ft/ln]	141.86	177.51	164.67	70.09	305.96	254.61
95th-Percentile Queue Length [veh/ln]	9.58	11.47	10.80	5.05	18.89	15.42
95th-Percentile Queue Length [ft/ln]	239.53	286.76	269.90	126.16	472.31	385.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.24	14.38	14.06	12.83	132.23	36.17
Movement LOS	D	B	B	B	F	D
d_A, Approach Delay [s/veh]	25.49		13.83		60.67	
Approach LOS	C		B		E	
d_I, Intersection Delay [s/veh]				31.87		
Intersection LOS				C		
Intersection V/C				0.558		

Sequence

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



Intersection Level Of Service Report

Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 29.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.563

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd				
Base Volume Input [veh/h]	0	0	0	0	70	180	90	3	190	98	300	350	
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	0	0	0	70	180	90	3	190	98	300	350	
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319	
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	0	0	0	0	23	60	30	1	50	26	80	94	
Total Analysis Volume [veh/h]	0	0	0	0	93	238	119	3	200	103	322	376	
Presence of On-Street Parking					No				No				No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	6				70				188				
Bicycle Volume [bicycles/h]	33				8				56				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0	0
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0	0
Rest in Walk	No												
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0	0.0
Minimum Recall	Yes												
Maximum Recall	No												
Pedestrian Recall	No												
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	47	47	47	59	59	59
g / C, Green / Cycle	0.39	0.39	0.39	0.49	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.09	0.10	0.12	0.17	0.17	0.26
s, saturation flow rate [veh/h]	1046	1900	1446	1171	1900	1453
c, Capacity [veh/h]	344	747	569	582	937	717
d1, Uniform Delay [s]	34.91	24.48	25.05	17.82	18.55	20.78
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.92	0.80	1.36	1.61	1.00	2.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.25	0.30	0.34	0.34	0.52
d, Delay for Lane Group [s/veh]	36.83	25.27	26.40	19.44	19.55	23.52
Lane Group LOS	D	C	C	B	B	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.34	3.69	3.53	3.36	5.60	7.53
50th-Percentile Queue Length [ft/ln]	58.58	92.31	88.33	83.96	140.06	188.36
95th-Percentile Queue Length [veh/ln]	4.22	6.65	6.36	6.05	9.48	12.04
95th-Percentile Queue Length [ft/ln]	105.45	166.16	159.00	151.13	237.10	300.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	36.83	25.52	26.40	0.00	19.44	0.00	19.55	23.52
Movement LOS					D	C	C		B		B	C
d_A, Approach Delay [s/veh]	0.00				28.09				21.19			
Approach LOS	A				C				C			
d_I, Intersection Delay [s/veh]	29.49											
Intersection LOS	C											
Intersection V/C	0.563											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	630	180	270	730	65	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	630	180	270	730	65	120
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	167	48	75	202	17	31
Total Analysis Volume [veh/h]	1	53	669	191	299	810	69	125
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	52	52	52
g / C, Green / Cycle	0.26	0.26	0.26	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.15	0.26	0.25	0.26
s, saturation flow rate [veh/h]	608	3618	1245	1140	1900	1741
c, Capacity [veh/h]	86	951	327	449	817	749
d1, Uniform Delay [s]	58.77	39.98	38.49	26.11	26.03	26.43
k, delay calibration	0.04	0.04	0.04	0.13	0.10	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.70	0.36	0.62	1.99	0.65	0.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

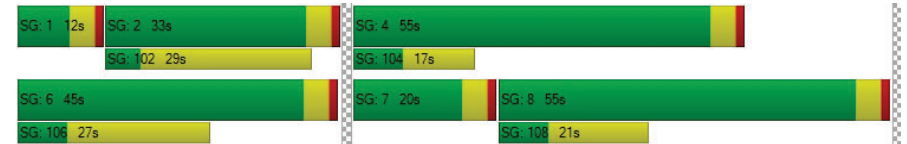
X, volume / capacity	0.62	0.70	0.58	0.67	0.58	0.61
d, Delay for Lane Group [s/veh]	61.47	40.34	39.11	28.11	26.68	27.38
Lane Group LOS	E	D	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.68	8.94	4.95	6.02	10.43	10.19
50th-Percentile Queue Length [ft/ln]	41.95	223.57	123.65	150.49	260.75	254.78
95th-Percentile Queue Length [veh/ln]	3.02	13.85	8.59	10.04	15.73	15.43
95th-Percentile Queue Length [ft/ln]	75.50	346.17	214.84	251.08	393.16	385.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	61.47	40.34	39.11	28.11	26.97	0.00	27.38
Movement LOS		E	D	D	C	C		C
d_A, Approach Delay [s/veh]	41.31				27.29			
Approach LOS	D				C			
d_I, Intersection Delay [s/veh]	29.49							
Intersection LOS	C							
Intersection V/C	0.563							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 265.8
 Level Of Service: F
 Volume to Capacity (v/c): 2.792

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	70	200	180	0	100	90	50	30	155	50	0	190	480	210	
Base Volume Input [veh/h]	0	70	200	180	0	100	90	50	30	155	50	0	190	480	210	
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	70	200	180	0	100	90	50	30	155	50	0	190	480	210	
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	0.8684	0.8684	0.8684	1.000	0.968	0.968	0.968	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
Total 15-Minute Volume [veh/h]	0	19	53	48	0	27	24	14	9	45	14	0	49	124	54	
Total Analysis Volume [veh/h]	0	75	213	192	0	108	97	54	35	178	58	0	196	496	217	
Presence of On-Street Parking	No			No	No			No	No		No	No			No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	2	2	2	0	6	6	6
Auxiliary Signal Groups															
Lead / Lag	-	Lag	-	-	-	Lag	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	14	14	14	0	14	14	14
Rest in Walk															
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No		Yes				Yes		
Maximum Recall							No		No				No		
Pedestrian Recall			No				No		No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.23	2.59	0.05	0.13	0.17	0.20	0.20
s, saturation flow rate [veh/h]	1256	1727	100	749	1809	1162	1900	1669
c, Capacity [veh/h]	73	268	66	306	855	500	898	789
d1, Uniform Delay [s]	50.02	42.26	48.41	24.79	16.01	24.02	17.35	17.44
k, delay calibration	0.04	0.22	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	37.04	239.12	1365.09	0.76	0.80	2.30	1.43	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

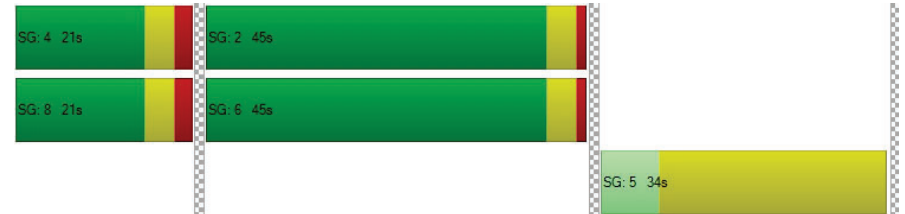
X, volume / capacity	1.03	1.51	3.95	0.11	0.28	0.39	0.42	0.43
d, Delay for Lane Group [s/veh]	87.05	281.38	1413.50	25.55	16.81	26.33	18.78	19.14
Lane Group LOS	F	F	F	C	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.55	24.24	26.45	0.66	3.38	3.77	5.86	5.34
50th-Percentile Queue Length [ft/ln]	63.80	606.12	661.37	16.47	84.48	94.35	146.45	133.53
95th-Percentile Queue Length [veh/ln]	4.59	37.99	44.31	1.19	6.08	6.79	9.83	9.13
95th-Percentile Queue Length [ft/ln]	114.84	949.78	1107.63	29.65	152.07	169.83	245.68	228.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	87.05	87.05	281.3	281.3	1413.	1413.	1413.	1413.	25.55	16.81	16.81	26.33	26.33	18.87	19.14
Movement LOS	F	F	F	F	F	F	F	F	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	251.02		1413.50				17.94		20.54						
Approach LOS	F		F				B		C						
d_I, Intersection Delay [s/veh]	265.82														
Intersection LOS	F														
Intersection V/C	2.792														

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 32.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.586

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
	Base Volume Input [veh/h]	70	330	120	30	120	40	60	180	80	110	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	330	120	30	120	40	60	180	80	110	140	140
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	87	32	9	35	12	18	55	25	31	40	40
Total Analysis Volume [veh/h]	74	348	127	35	142	47	74	222	99	125	159	159
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	16	16	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	46	46
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.08	0.03	0.11	0.28	0.40
s, saturation flow rate [veh/h]	1213	1900	1546	1049	1795	1430	1100
c, Capacity [veh/h]	236	461	375	130	436	694	547
d1, Uniform Delay [s]	39.79	35.09	31.23	46.17	32.04	19.46	24.85
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.95	0.20	0.41	0.25	3.37	12.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

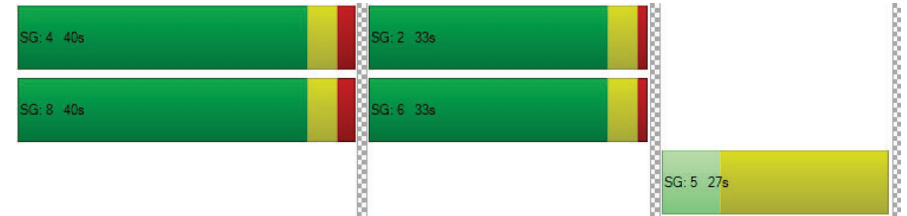
X, volume / capacity	0.31	0.75	0.34	0.27	0.43	0.57	0.81
d, Delay for Lane Group [s/veh]	40.07	36.05	31.43	46.58	32.29	22.83	37.13
Lane Group LOS	D	D	C	D	C	C	D
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.67	7.76	2.50	0.85	3.82	6.94	10.94
50th-Percentile Queue Length [ft/ln]	41.67	194.12	62.57	21.33	95.51	173.56	273.44
95th-Percentile Queue Length [veh/ln]	3.00	12.33	4.50	1.54	6.88	11.26	16.36
95th-Percentile Queue Length [ft/ln]	75.01	308.37	112.62	38.39	171.91	281.60	409.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.07	36.05	31.43	46.58	32.29	32.29	22.83	22.83	22.83	37.13	37.13	37.13
Movement LOS	D	D	C	D	C	C	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	35.52			34.53			22.83			37.13		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	32.71											
Intersection LOS	C											
Intersection V/C	0.586											

Sequence

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



Intersection Level Of Service Report
Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 137.3
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.276

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	20	360	120	60	210	40	40	320	40	110	260	230
Base Volume Input [veh/h]	20	360	120	60	210	40	40	320	40	110	260	230
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	360	120	60	210	40	40	320	40	110	260	230
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	101	34	17	58	11	11	87	11	32	75	66
Total Analysis Volume [veh/h]	23	405	135	67	233	44	43	346	43	126	299	264
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.09	0.07	0.15	0.67	0.03	1.06	0.17
s, saturation flow rate [veh/h]	1120	1900	1524	996	1831	583	1570	400	1581
c, Capacity [veh/h]	109	370	297	72	356	333	789	248	795
d1, Uniform Delay [s]	47.70	40.25	35.57	49.97	38.20	34.90	12.71	29.58	14.83
k, delay calibration	0.04	0.27	0.04	0.04	0.07	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	63.19	0.41	17.10	2.30	103.07	0.13	338.40	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

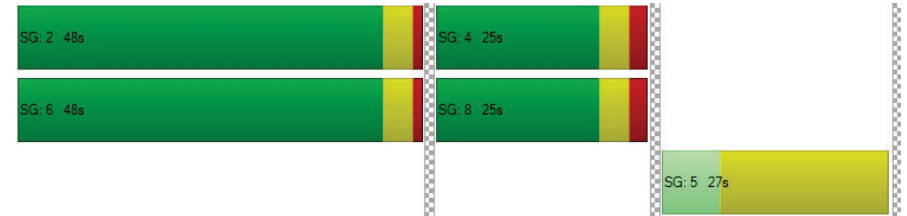
X, volume / capacity	0.21	1.10	0.46	0.93	0.78	1.17	0.05	1.72	0.33
d, Delay for Lane Group [s/veh]	48.05	103.43	35.97	67.07	40.50	137.97	12.84	367.99	15.96
Lane Group LOS	D	F	D	E	D	F	B	F	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.57	15.33	2.89	1.99	6.52	16.50	0.51	29.46	3.70
50th-Percentile Queue Length [ft/ln]	14.21	383.23	72.17	49.87	162.88	412.59	12.78	736.46	92.61
95th-Percentile Queue Length [veh/ln]	1.02	22.80	5.20	3.59	10.70	25.70	0.92	50.43	6.67
95th-Percentile Queue Length [ft/ln]	25.57	570.00	129.90	89.76	267.54	642.53	23.00	1260.80	166.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.05	103.43	35.97	67.07	40.50	40.50	137.97	137.97	12.84	367.99	367.99	15.96
Movement LOS	D	F	D	E	D	D	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	85.00			45.68			125.52			233.10		
Approach LOS	F			D			F			F		
d_I, Intersection Delay [s/veh]	137.28											
Intersection LOS	F											
Intersection V/C	1.276											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 32.5
Level Of Service: C
Volume to Capacity (v/c): 0.439

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	40	200	270	110	320	20	30	220	140	160	290	300
Base Volume Input [veh/h]	40	200	270	110	320	20	30	220	140	160	290	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	200	270	110	320	20	30	220	140	160	290	300
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	59	80	29	86	5	8	58	37	46	84	87
Total Analysis Volume [veh/h]	47	237	320	118	342	21	31	230	146	185	335	346
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.22	0.10	0.19	0.03	0.21	0.18	0.18	0.22
s, saturation flow rate [veh/h]	1035	1900	1473	1161	1876	1062	1753	1023	1900	1559
c, Capacity [veh/h]	119	464	360	209	459	377	759	331	823	675
d1, Uniform Delay [s]	47.77	32.61	36.46	43.27	35.39	26.17	20.46	34.00	19.52	20.66
k, delay calibration	0.04	0.04	0.18	0.04	0.11	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.80	0.32	11.41	0.89	3.16	0.43	2.30	6.64	1.49	2.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

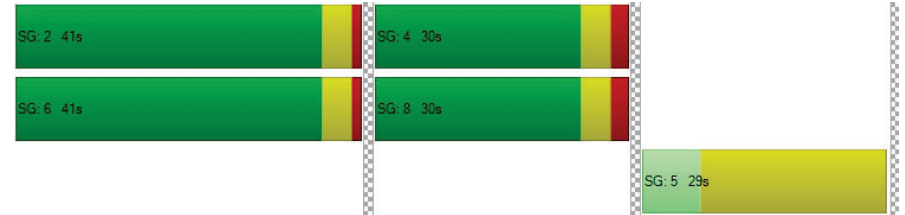
X, volume / capacity	0.40	0.51	0.89	0.56	0.79	0.08	0.50	0.56	0.41	0.51
d, Delay for Lane Group [s/veh]	48.57	32.93	47.87	44.16	38.55	26.60	22.77	40.64	21.01	23.43
Lane Group LOS	D	C	D	D	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.18	4.88	8.45	2.86	8.45	0.58	6.53	4.59	5.48	6.13
50th-Percentile Queue Length [ft/ln]	29.49	122.10	211.30	71.52	211.28	14.43	163.23	114.70	136.91	153.33
95th-Percentile Queue Length [veh/ln]	2.12	8.51	13.22	5.15	13.22	1.04	10.72	8.10	9.31	10.19
95th-Percentile Queue Length [ft/ln]	53.08	212.70	330.49	128.74	330.47	25.98	268.00	202.52	232.85	254.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.57	32.93	47.87	44.16	38.55	38.55	26.60	22.77	22.77	40.64	21.01	23.43
Movement LOS	D	C	D	D	D	C	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	42.06		39.92			23.06		26.17				
Approach LOS	D		D			C		C				
d_I, Intersection Delay [s/veh]	32.51											
Intersection LOS	C											
Intersection V/C	0.439											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 43.1
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.456

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	10	440	0	29	410	100	66	90	0	80	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	440	0	29	410	100	66	90	0	80	350	200
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	118	0	8	110	27	20	27	0	21	93	53
Total Analysis Volume [veh/h]	11	472	0	31	441	107	79	108	0	85	372	213
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	33	33	33	33	58	58
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.01	0.25	0.24	0.08	0.20	0.20
s, saturation flow rate [veh/h]	944	1863	1863	1400	1878	1499
c, Capacity [veh/h]	88	509	509	383	907	724
d1, Uniform Delay [s]	57.20	42.41	41.48	34.28	19.92	20.10
k, delay calibration	0.04	0.32	0.49	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	18.19	17.46	0.15	1.34	1.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.93	0.87	0.28	0.40	0.42
d, Delay for Lane Group [s/veh]	57.44	60.60	58.94	34.43	21.26	21.88
Lane Group LOS	E	E	E	C	C	C
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.33	16.06	14.66	2.46	6.98	5.90
50th-Percentile Queue Length [ft/ln]	8.34	401.46	366.59	61.51	174.42	147.43
95th-Percentile Queue Length [veh/ln]	0.60	22.63	20.94	4.43	11.31	9.88
95th-Percentile Queue Length [ft/ln]	15.02	565.75	523.59	110.72	282.72	246.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.44	60.60	0.00	0.00	58.94	34.43	0.00	0.00	0.00	21.26	21.41	21.88
Movement LOS	E	E			E	C				C	C	C
d_A, Approach Delay [s/veh]	60.53		54.15			0.00				21.54		
Approach LOS	E		D			A				C		
d_I, Intersection Delay [s/veh]	43.12											
Intersection LOS	D											
Intersection V/C	0.456											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 44.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.591

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	120	340	250	130	120	70	90	520	30	330	720	190
Base Volume Input [veh/h]	120	340	250	130	120	70	90	520	30	330	720	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	340	250	130	120	70	90	520	30	330	720	190
Peak Hour Factor	0.9113	0.9113	0.9113	0.9394	0.9394	0.9394	0.9213	0.9213	0.9213	0.8418	0.8418	0.8418
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	93	69	35	32	19	24	141	8	98	214	56
Total Analysis Volume [veh/h]	132	373	274	138	128	75	98	564	33	392	855	226
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	46	46	46	35	20	20	35	26	26
g / C, Green / Cycle	0.39	0.39	0.39	0.51	0.51	0.51	0.39	0.23	0.23	0.39	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.10	0.20	0.18	0.12	0.07	0.05	0.14	0.16	0.16	0.33	0.29	0.31
s, saturation flow rate [veh/h]	1264	1900	1541	1166	1900	1567	712	1900	1818	1194	1900	1684
c, Capacity [veh/h]	506	748	607	560	962	793	348	427	409	460	547	484
d1, Uniform Delay [s]	22.08	20.59	20.13	12.99	11.77	11.52	20.54	32.14	32.31	24.99	32.06	32.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.32	0.37
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.25	2.37	2.42	1.05	0.29	0.24	0.16	0.80	0.92	17.73	34.86	60.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

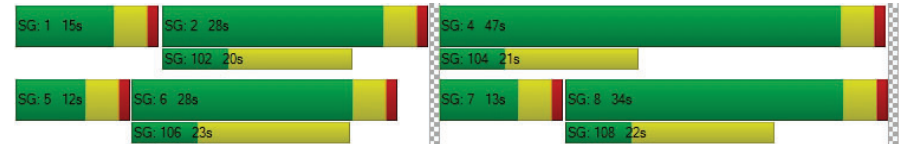
X, volume / capacity	0.26	0.50	0.45	0.25	0.13	0.09	0.28	0.71	0.72	0.85	1.02	1.09
d, Delay for Lane Group [s/veh]	23.33	22.96	22.55	14.04	12.05	11.76	20.71	32.95	33.22	42.71	66.93	92.83
Lane Group LOS	C	C	C	B	B	B	C	C	C	D	F	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.16	6.09	4.43	1.55	1.35	0.78	1.27	5.91	5.85	8.31	16.56	18.16
50th-Percentile Queue Length [ft/ln]	54.06	152.35	110.75	38.63	33.66	19.52	31.70	147.82	146.18	207.87	413.93	453.97
95th-Percentile Queue Length [veh/ln]	3.89	10.14	7.88	2.78	2.42	1.41	2.28	9.90	9.81	13.04	23.46	26.43
95th-Percentile Queue Length [ft/ln]	97.30	253.56	197.05	69.53	60.59	35.14	57.06	247.52	245.32	326.09	586.47	660.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.33	22.96	22.55	14.04	12.05	11.76	20.71	33.08	33.22	42.71	76.01	92.83
Movement LOS	C	C	C	B	B	B	C	C	C	D	E	F
d_A, Approach Delay [s/veh]	22.88			12.79			31.34			69.73		
Approach LOS	C			B			C			E		
d_I, Intersection Delay [s/veh]	44.61											
Intersection LOS	D											
Intersection V/C	0.591											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	47.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.566

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	70	150	140	100	260	20	30	520	60	210	780	110
Base Volume Input [veh/h]	70	150	140	100	260	20	30	520	60	210	780	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	150	140	100	260	20	30	520	60	210	780	110
Peak Hour Factor	0.7729	0.7729	0.7729	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	49	45	27	70	5	8	138	16	58	215	30
Total Analysis Volume [veh/h]	91	194	181	108	280	22	32	553	64	232	860	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	30	30	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.30	0.30	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.11	0.09	0.15	0.01	0.05	0.33	0.21	0.26	0.27
s, saturation flow rate [veh/h]	1117	1900	1577	1208	1900	1581	583	1861	1089	1900	1806
c, Capacity [veh/h]	110	368	306	171	368	307	118	564	344	844	802
d1, Uniform Delay [s]	49.42	36.27	36.79	46.34	38.20	33.03	44.97	34.93	22.91	21.01	21.08
k, delay calibration	0.04	0.04	0.04	0.04	0.06	0.04	0.50	0.50	0.18	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.94	0.43	0.68	1.43	1.69	0.04	5.58	65.98	3.85	3.05	3.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

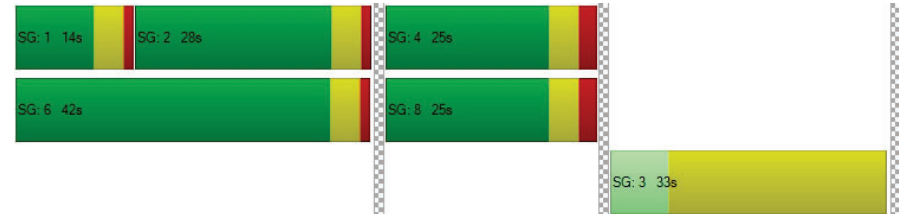
X, volume / capacity	0.83	0.53	0.59	0.63	0.76	0.07	0.27	1.09	0.67	0.59	0.60
d, Delay for Lane Group [s/veh]	55.36	36.71	37.47	47.77	39.89	33.07	50.55	100.91	26.76	24.06	24.37
Lane Group LOS	E	D	D	D	D	C	D	F	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.43	4.22	4.01	2.73	6.51	0.43	0.95	23.69	3.71	9.26	8.96
50th-Percentile Queue Length [ft/ln]	60.73	105.40	100.14	68.18	162.83	10.85	23.81	592.14	92.87	231.51	224.12
95th-Percentile Queue Length [veh/ln]	4.37	7.58	7.21	4.91	10.70	0.78	1.71	33.51	6.69	14.25	13.88
95th-Percentile Queue Length [ft/ln]	109.31	189.59	180.26	122.72	267.46	19.52	42.86	837.83	167.16	356.27	346.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.36	36.71	37.47	47.77	39.89	33.07	50.55	100.91	100.91	26.76	24.19	24.37
Movement LOS	E	D	D	D	D	C	D	F	F	C	C	C
d_A, Approach Delay [s/veh]	40.65			41.60			98.43			24.70		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	47.42											
Intersection LOS	D											
Intersection V/C	0.566											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 96.6
Level Of Service: F
Volume to Capacity (v/c): 0.708

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	70	310	70	50	400	60	40	150	160	110	290	40
Base Volume Input [veh/h]	70	310	70	50	400	60	40	150	160	110	290	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	310	70	50	400	60	40	150	160	110	290	40
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	87	20	16	128	19	11	43	45	30	80	11
Total Analysis Volume [veh/h]	79	350	79	64	513	77	45	170	182	122	321	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	39	39	39	39	28
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.28
(v / s)_i Volume / Saturation Flow Rate	0.09	0.18	0.05	0.06	0.16	0.16	0.28
s, saturation flow rate [veh/h]	839	1900	1554	1047	1900	1796	1536
c, Capacity [veh/h]	282	746	610	312	746	705	477
d1, Uniform Delay [s]	30.99	22.61	19.43	31.62	21.92	21.98	33.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.31
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.46	2.11	0.44	1.48	1.62	1.76	10.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

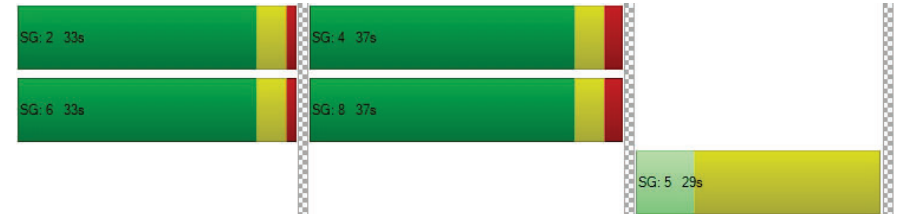
X, volume / capacity	0.28	0.47	0.13	0.20	0.40	0.41	0.83
d, Delay for Lane Group [s/veh]	33.45	24.73	19.87	33.09	23.54	23.74	44.15
Lane Group LOS	C	C	B	C	C	C	D
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.73	6.33	1.22	1.37	5.25	5.08	10.39
50th-Percentile Queue Length [ft/ln]	43.37	158.34	30.45	34.35	131.31	126.91	259.76
95th-Percentile Queue Length [veh/ln]	3.12	10.46	2.19	2.47	9.01	8.77	15.68
95th-Percentile Queue Length [ft/ln]	78.07	261.52	54.81	61.82	225.27	219.28	391.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.45	24.73	19.87	33.09	23.62	23.74	44.15	44.15	44.15	310.54	310.54	310.54
Movement LOS	C	C	B	C	C	C	D	D	D	F	F	F
d_A, Approach Delay [s/veh]	25.33			24.57			44.15			310.54		
Approach LOS	C			C			D			F		
d_I, Intersection Delay [s/veh]	96.62											
Intersection LOS	F											
Intersection V/C	0.708											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 32.3
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.495

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	100	410	100	120	500	80	0	410	170	0	400
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	410	100	120	500	80	0	410	170	0	400	190
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	124	30	32	135	22	0	111	46	0	114	54
Total Analysis Volume [veh/h]	121	496	121	129	539	86	0	444	184	0	456	216
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	45	45	45	45	45	45	25	25	25	25
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.45	0.45	0.25	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.15	0.26	0.08	0.14	0.17	0.17	0.23	0.12	0.18	0.20
s, saturation flow rate [veh/h]	813	1900	1581	916	1900	1796	1900	1570	1900	1682
c, Capacity [veh/h]	322	850	707	277	850	804	474	392	474	420
d1, Uniform Delay [s]	28.15	20.66	16.53	35.02	18.36	18.39	36.74	31.89	34.20	35.18
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.24	0.04	0.08	0.14
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.33	2.92	0.52	5.52	1.27	1.37	16.89	0.33	1.44	4.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

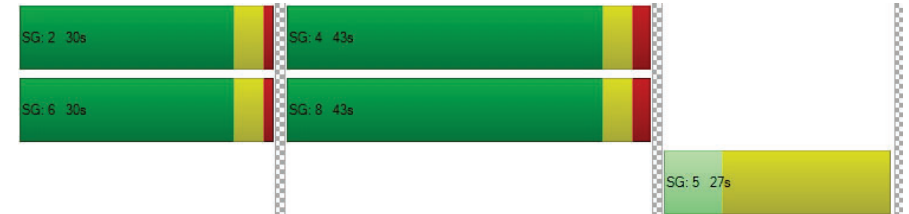
X, volume / capacity	0.38	0.58	0.17	0.47	0.38	0.38	0.94	0.47	0.71	0.80
d, Delay for Lane Group [s/veh]	31.48	23.58	17.06	40.54	19.63	19.76	53.63	32.22	35.65	39.88
Lane Group LOS	C	C	B	D	B	B	D	C	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.59	8.89	1.70	3.19	5.00	4.80	12.63	3.78	7.52	8.09
50th-Percentile Queue Length [ft/ln]	64.66	222.33	42.61	79.77	124.95	120.00	315.73	94.47	188.02	202.22
95th-Percentile Queue Length [veh/ln]	4.66	13.78	3.07	5.74	8.66	8.39	18.46	6.80	12.02	12.75
95th-Percentile Queue Length [ft/ln]	116.39	344.60	76.70	143.59	216.61	209.83	461.44	170.05	300.46	318.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.48	23.58	17.06	40.54	19.68	19.76	0.00	53.63	32.22	0.00	36.76	39.88
Movement LOS	C	C	B	D	B	B		D	C		D	D
d_A, Approach Delay [s/veh]	23.81			23.26			47.35			37.77		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	32.31											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 44.1
Level Of Service: D
Volume to Capacity (v/c): 0.582

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	70	450	150	120	420	90	0	310	130	80	420
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	450	150	120	420	90	0	310	130	80	420	100
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	130	43	39	135	29	0	86	36	23	120	29
Total Analysis Volume [veh/h]	81	520	173	154	540	116	0	345	145	92	480	114
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	40	40	53	39	39	24	38	35	35	35
g / C, Green / Cycle	0.08	0.33	0.33	0.44	0.32	0.32	0.20	0.32	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.27	0.11	0.14	0.18	0.18	0.18	0.09	0.07	0.25	0.07
s, saturation flow rate [veh/h]	1810	1900	1562	1086	1900	1766	1900	1562	1254	1900	1570
c, Capacity [veh/h]	147	631	518	337	609	566	374	495	267	554	458
d1, Uniform Delay [s]	53.07	36.92	30.15	25.39	33.74	33.84	47.32	30.92	33.88	40.35	32.52
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.20	0.04	0.04	0.28	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.19	11.69	1.73	4.40	3.62	4.00	15.39	0.12	0.29	10.07	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

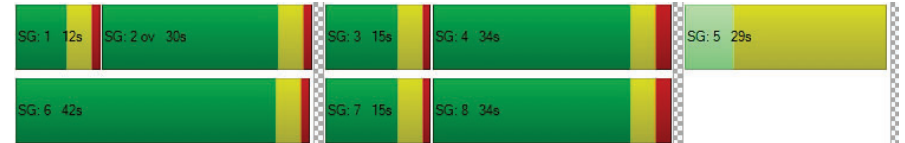
X, volume / capacity	0.55	0.82	0.33	0.46	0.56	0.56	0.92	0.29	0.34	0.87	0.25
d, Delay for Lane Group [s/veh]	54.27	48.60	31.88	29.80	37.37	37.84	62.72	31.04	34.17	50.42	32.62
Lane Group LOS	D	D	C	C	D	D	E	C	C	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.38	15.75	3.97	3.03	8.65	8.21	11.68	3.20	2.01	14.74	2.54
50th-Percentile Queue Length [ft/ln]	59.58	393.79	99.32	75.75	216.14	205.25	291.91	79.98	50.29	368.42	63.44
95th-Percentile Queue Length [veh/ln]	4.29	22.26	7.15	5.45	13.47	12.91	17.28	5.76	3.62	21.03	4.57
95th-Percentile Queue Length [ft/ln]	107.24	556.51	178.78	136.35	336.70	322.73	432.01	143.96	90.53	525.81	114.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.27	48.60	31.88	29.80	37.54	37.84	0.00	62.72	31.04	34.17	50.42	32.62
Movement LOS	D	D	C	C	D	D		E	C	C	D	C
d_A, Approach Delay [s/veh]	45.46			36.11			53.34			45.28		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.07											
Intersection LOS	D											
Intersection V/C	0.582											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 26.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.438

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	150	590	0	0	650	110	181	0	84	160	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	590	0	0	650	110	181	0	84	160	290	40
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	176	0	0	179	30	52	0	24	44	80	11
Total Analysis Volume [veh/h]	179	705	0	0	717	121	208	0	96	176	319	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	70	70	58	58	21	21
g / C, Green / Cycle	0.58	0.58	0.48	0.48	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.21	0.19	0.22	0.24	0.15	0.15
s, saturation flow rate [veh/h]	835	3618	1900	1781	1843	1672
c, Capacity [veh/h]	468	2115	916	858	317	287
d1, Uniform Delay [s]	13.74	12.86	20.67	21.07	48.62	48.65
k, delay calibration	0.13	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.42	1.65	1.98	3.49	3.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.33	0.46	0.49	0.89	0.89
d, Delay for Lane Group [s/veh]	14.37	13.29	22.32	23.06	52.10	52.58
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.26	4.92	8.02	8.22	8.62	7.89
50th-Percentile Queue Length [ft/ln]	56.44	123.02	200.48	205.48	215.52	197.27
95th-Percentile Queue Length [veh/ln]	4.06	8.56	12.66	12.92	13.44	12.50
95th-Percentile Queue Length [ft/ln]	101.59	213.97	316.59	323.02	335.90	312.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.37	13.29	0.00	0.00	22.63	23.06	0.00	0.00	0.00	52.10	52.42	52.58
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	13.51		22.69		0.00		52.33					
Approach LOS	B		C		A		D					
d_I, Intersection Delay [s/veh]	26.17											
Intersection LOS	C											
Intersection V/C	0.438											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	26.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.585

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		620	430
Base Volume Input [veh/h]	390	0	0	920		
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	390	0	0	920	620	430
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	0	0	260	170	118
Total Analysis Volume [veh/h]	446	0	0	1041	681	472
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	73	73	38	38
g / C, Green / Cycle	0.61	0.61	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.12	0.29	0.19	0.30
s, saturation flow rate [veh/h]	3618	3618	3514	1587
c, Capacity [veh/h]	2196	2196	1111	501
d1, Uniform Delay [s]	10.55	12.98	34.76	39.89
k, delay calibration	0.50	0.50	0.04	0.26
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.74	0.21	18.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

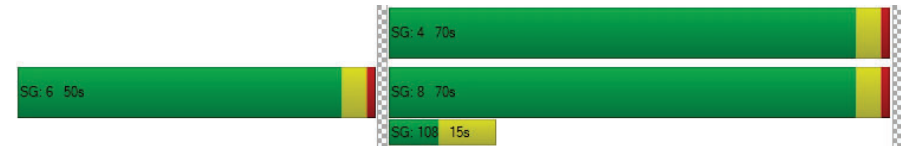
X, volume / capacity	0.20	0.47	0.61	0.94
d, Delay for Lane Group [s/veh]	10.76	13.72	34.96	57.90
Lane Group LOS	B	B	C	E
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.66	7.69	7.95	15.10
50th-Percentile Queue Length [ft/ln]	66.56	192.27	198.69	377.53
95th-Percentile Queue Length [veh/ln]	4.79	12.24	12.57	21.47
95th-Percentile Queue Length [ft/ln]	119.80	305.97	314.28	536.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.76	0.00	0.00	13.72	34.96	57.90
Movement LOS	B			B	C	E
d_A, Approach Delay [s/veh]	10.76		13.72		44.35	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]			26.60			
Intersection LOS			C			
Intersection V/C			0.585			

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 55.3
Level Of Service: E
Volume to Capacity (v/c): 0.557

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	10	350	480	480	790	240	30	520	30	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	350	480	480	790	240	30	520	30	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	90	123	134	221	67	9	155	9	0	0	0
Total Analysis Volume [veh/h]	10	358	491	536	883	268	36	621	36	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	1	25	25	63	87	87	18	18	18
g / C, Green / Cycle	0.01	0.21	0.21	0.53	0.72	0.72	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.27	0.15	0.31	0.34	0.13	0.13	0.13
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1665	1886	1729	1672
c, Capacity [veh/h]	22	396	375	1850	1373	1203	283	259	251
d1, Uniform Delay [s]	58.81	46.26	47.44	15.86	6.66	6.97	49.83	49.81	49.91
k, delay calibration	0.04	0.33	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.33	19.54	156.62	0.03	0.97	1.32	3.29	3.52	3.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.90	1.31	0.29	0.43	0.47	0.87	0.87	0.88
d, Delay for Lane Group [s/veh]	64.15	65.80	204.06	15.89	7.63	8.28	53.12	53.34	53.90
Lane Group LOS	E	E	F	B	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.33	12.51	27.47	4.09	5.76	5.86	7.41	6.79	6.69
50th-Percentile Queue Length [ft/ln]	8.37	312.78	686.79	102.14	143.90	146.59	185.17	169.78	167.35
95th-Percentile Queue Length [veh/ln]	0.60	18.31	41.15	7.35	9.69	9.83	11.87	11.06	10.94
95th-Percentile Queue Length [ft/ln]	15.06	457.80	1028.87	183.85	242.27	245.87	296.75	276.62	273.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.15	65.80	204.06	15.89	7.85	8.28	53.12	53.43	53.90	0.00	0.00	0.00
Movement LOS	E	E	F	B	A	A	D	D	D			
d_A, Approach Delay [s/veh]	144.81			10.48			53.44			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	55.29											
Intersection LOS	E											
Intersection V/C	0.557											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.461

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	170	140	170	30	60	30	30	690	80	110	960	60
Base Volume Input [veh/h]	170	140	170	30	60	30	30	690	80	110	960	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	140	170	30	60	30	30	690	80	110	960	60
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	39	47	8	16	8	8	180	21	29	257	16
Total Analysis Volume [veh/h]	188	155	188	32	63	32	31	720	83	118	1028	64
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	26	61	61	61	61	61	61
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.16	0.08	0.13	0.03	0.06	0.06	0.20	0.06	0.16	0.29	0.30
s, saturation flow rate [veh/h]	1169	1900	1455	1184	1667	525	3618	1422	733	1900	1804
c, Capacity [veh/h]	298	494	378	277	433	292	2200	865	431	1155	1097
d1, Uniform Delay [s]	38.70	29.79	31.42	35.13	29.01	17.87	9.58	8.15	15.52	10.81	10.96
k, delay calibration	0.06	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.16	0.13	0.38	0.07	0.09	0.73	0.40	0.22	1.57	1.41	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

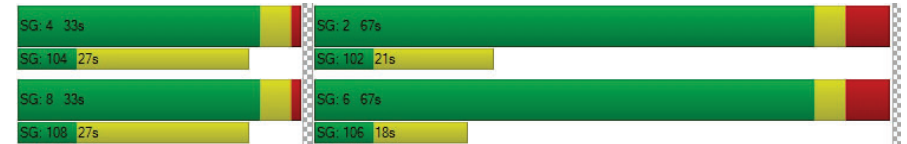
X, volume / capacity	0.63	0.31	0.50	0.12	0.22	0.11	0.33	0.10	0.27	0.48	0.49
d, Delay for Lane Group [s/veh]	39.86	29.92	31.80	35.20	29.11	18.60	9.98	8.37	17.09	12.22	12.54
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.41	2.96	3.80	0.66	1.77	0.49	3.72	0.76	1.78	6.67	6.66
50th-Percentile Queue Length [ft/ln]	110.32	74.00	95.06	16.45	44.18	12.37	92.96	18.96	44.40	166.73	166.52
95th-Percentile Queue Length [veh/ln]	7.86	5.33	6.84	1.18	3.18	0.89	6.69	1.37	3.20	10.90	10.89
95th-Percentile Queue Length [ft/ln]	196.44	133.20	171.12	29.61	79.52	22.27	167.32	34.13	79.93	272.61	272.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.86	29.92	31.80	35.20	29.11	29.11	18.60	9.98	8.37	17.09	12.37	12.54
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	34.11			30.64			10.14			12.84		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.02											
Intersection LOS	B											
Intersection V/C	0.461											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 26.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.512

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	100	330	50	20	140	30	20	450	50	50	290	90
Base Volume Input [veh/h]	100	330	50	20	140	30	20	450	50	50	290	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	330	50	20	140	30	20	450	50	50	290	90
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	90	14	6	41	9	6	130	14	15	87	27
Total Analysis Volume [veh/h]	109	359	54	24	166	35	23	522	58	60	349	108
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	2.0	3.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	14	16	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	49	49	49	49	49	42	42
g / C, Green / Cycle	0.49	0.49	0.49	0.49	0.49	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.12	0.02	0.11	0.35	0.40
s, saturation flow rate [veh/h]	1139	1900	1745	966	1780	1704	1308
c, Capacity [veh/h]	534	930	854	462	871	750	587
d1, Uniform Delay [s]	19.54	14.65	14.74	18.25	14.69	25.42	27.01
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.24	0.30
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.86	0.56	0.65	0.21	0.62	4.47	11.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

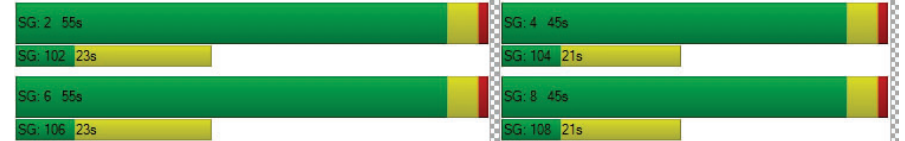
X, volume / capacity	0.20	0.23	0.24	0.05	0.23	0.80	0.88
d, Delay for Lane Group [s/veh]	20.41	15.21	15.39	18.47	15.31	29.89	38.22
Lane Group LOS	C	B	B	B	B	C	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.75	2.77	2.70	0.36	2.66	12.78	13.36
50th-Percentile Queue Length [ft/ln]	43.66	69.20	67.50	8.98	66.58	319.44	333.96
95th-Percentile Queue Length [veh/ln]	3.14	4.98	4.86	0.65	4.79	18.64	19.35
95th-Percentile Queue Length [ft/ln]	78.60	124.57	121.50	16.17	119.85	466.00	483.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.41	15.29	15.39	18.47	15.31	15.31	29.89	29.89	29.89	38.22	38.22	38.22
Movement LOS	C	B	B	B	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	16.37			15.64			29.89			38.22		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	26.70											
Intersection LOS	C											
Intersection V/C	0.512											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.6
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.403

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	200	470	30	130	150	30	110	480	60	30	310
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	470	30	130	150	30	110	480	60	30	310	50
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8553	0.8553	0.8553	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	134	9	37	42	8	32	140	18	9	97	16
Total Analysis Volume [veh/h]	228	536	34	147	169	34	129	561	70	37	387	62
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.20	0.15	0.16	0.17	0.11	0.13	0.17	0.18	0.05	0.20	0.04
s, saturation flow rate [veh/h]	1142	1900	1819	842	1779	994	1900	1751	793	1900	1400
c, Capacity [veh/h]	283	559	535	195	524	511	1090	1004	436	1090	803
d1, Uniform Delay [s]	41.44	29.31	29.44	43.84	28.08	17.92	10.93	11.04	15.35	11.41	9.51
k, delay calibration	0.14	0.04	0.04	0.07	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.05	0.27	0.30	3.94	0.17	1.19	0.69	0.80	0.38	0.91	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.51	0.53	0.75	0.39	0.25	0.29	0.31	0.08	0.36	0.08
d, Delay for Lane Group [s/veh]	48.49	29.59	29.74	47.78	28.25	19.11	11.62	11.83	15.74	12.31	9.69
Lane Group LOS	D	C	C	D	C	B	B	B	B	B	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.12	5.64	5.55	3.84	3.80	2.04	3.67	3.59	0.52	4.62	0.62
50th-Percentile Queue Length [ft/ln]	152.98	140.91	138.72	95.93	95.07	50.98	91.76	89.71	12.93	115.60	15.56
95th-Percentile Queue Length [veh/ln]	10.18	9.53	9.41	6.91	6.85	3.67	6.61	6.46	0.93	8.15	1.12
95th-Percentile Queue Length [ft/ln]	254.40	238.25	235.30	172.68	171.13	91.77	165.17	161.48	23.28	203.76	28.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.49	29.66	29.74	47.78	28.25	28.25	19.11	11.71	11.83	15.74	12.31	9.69
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	35.04			36.45			12.98			12.24		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	23.62											
Intersection LOS	C											
Intersection V/C	0.403											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.1
Level Of Service: C
Volume to Capacity (v/c): 0.496

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	200	660	50	30	110	60	70	470	40	40	300	30
Base Volume Input [veh/h]	200	660	50	30	110	60	70	470	40	40	300	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	660	50	30	110	60	70	470	40	40	300	30
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	173	13	8	31	17	19	125	11	11	83	8
Total Analysis Volume [veh/h]	210	693	52	33	123	67	75	500	43	44	332	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	31	31	31	31	31	60	60	60	60	60
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.31	0.60	0.60	0.60	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.20	0.05	0.11	0.07	0.29	0.05	0.17	0.02
s, saturation flow rate [veh/h]	1189	1900	1818	727	1718	1035	1850	874	1900	1427
c, Capacity [veh/h]	304	583	558	148	527	590	1112	440	1142	858
d1, Uniform Delay [s]	39.30	29.93	30.07	41.92	26.97	13.44	11.26	17.61	9.64	8.14
k, delay calibration	0.06	0.12	0.13	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.50	1.30	1.57	0.28	0.15	0.44	1.53	0.45	0.65	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.65	0.66	0.22	0.36	0.13	0.49	0.10	0.29	0.04
d, Delay for Lane Group [s/veh]	40.80	31.23	31.64	42.20	27.12	13.88	12.79	18.06	10.28	8.22
Lane Group LOS	D	C	C	D	C	B	B	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.03	7.80	7.69	0.76	3.47	0.94	6.59	0.65	3.41	0.29
50th-Percentile Queue Length [ft/ln]	125.85	195.09	192.17	19.08	86.75	23.54	164.74	16.37	85.14	7.22
95th-Percentile Queue Length [veh/ln]	8.71	12.38	12.23	1.37	6.25	1.70	10.80	1.18	6.13	0.52
95th-Percentile Queue Length [ft/ln]	217.84	309.62	305.85	34.34	156.15	42.38	269.99	29.47	153.26	13.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.80	31.42	31.64	42.20	27.12	27.12	13.88	12.79	12.79	18.06	10.28	8.22
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	33.49			29.35			12.92			10.95		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	23.13											
Intersection LOS	C											
Intersection V/C	0.496											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 27.4
 Level Of Service: C
 Volume to Capacity (v/c): 0.545

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	14	930	130	60	40	120	0	0	0	6	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	930	130	60	40	120	0	0	0	6	260	50
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	256	36	18	12	35	0	0	0	2	86	17
Total Analysis Volume [veh/h]	15	1023	143	71	47	142	0	0	0	6	344	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	6	49	40
g / C, Green / Cycle	0.39	0.39	0.06	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.28	0.11	0.04	0.12	0.22
s, saturation flow rate [veh/h]	3618	1338	1810	1620	1840
c, Capacity [veh/h]	1398	517	109	799	745
d1, Uniform Delay [s]	26.22	21.05	45.92	14.54	22.76
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.41	1.32	2.42	0.70	2.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

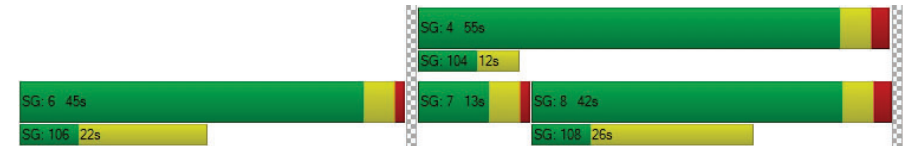
X, volume / capacity	0.73	0.28	0.65	0.24	0.55
d, Delay for Lane Group [s/veh]	29.63	22.38	48.34	15.24	25.68
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	10.74	2.45	1.77	2.50	7.80
50th-Percentile Queue Length [ft/ln]	268.59	61.34	44.30	62.47	195.12
95th-Percentile Queue Length [veh/ln]	16.12	4.42	3.19	4.50	12.39
95th-Percentile Queue Length [ft/ln]	402.98	110.41	79.73	112.45	309.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	29.63	22.38	48.34	15.24	15.24	0.00	0.00	0.00	0.00	25.68	25.68
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		28.74		24.28		0.00				25.68		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		27.42										
Intersection LOS		C										
Intersection V/C		0.545										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 14.1
 Level Of Service: B
 Volume to Capacity (v/c): 0.410

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	40	110	40	20	100	10	20	370	30	40	390	50
Base Volume Input [veh/h]	40	110	40	20	100	10	20	370	30	40	390	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	110	40	20	100	10	20	370	30	40	390	50
Peak Hour Factor	0.9215	0.9215	0.9215	0.9000	0.9000	0.9000	0.9174	0.9174	0.9174	0.9183	0.9183	0.9183
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	30	11	6	28	3	5	101	8	11	106	14
Total Analysis Volume [veh/h]	43	119	43	22	111	11	22	403	33	44	425	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	17	74	74	74
g / C, Green / Cycle	0.17	0.17	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.13	0.09	0.25	0.28	0.03
s, saturation flow rate [veh/h]	1615	1674	1822	1659	1575
c, Capacity [veh/h]	314	322	1387	1268	1166
d1, Uniform Delay [s]	39.45	37.55	4.46	4.47	3.49
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.86	0.36	0.64	0.83	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.45	0.33	0.37	0.05
d, Delay for Lane Group [s/veh]	40.31	37.91	5.10	5.30	3.56
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.76	3.15	2.74	2.85	0.25
50th-Percentile Queue Length [ft/ln]	119.01	78.86	68.50	71.33	6.35
95th-Percentile Queue Length [veh/ln]	8.34	5.68	4.93	5.14	0.46
95th-Percentile Queue Length [ft/ln]	208.47	141.95	123.29	128.39	11.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.31	40.31	40.31	37.91	37.91	37.91	5.10	5.10	5.10	5.30	5.30	3.56
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.31			37.91			5.10			5.12		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.09											
Intersection LOS	B											
Intersection V/C	0.410											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 18.4
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.495

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	50	90	70	60	90	30	20	540	40	60	340	40
Base Volume Input [veh/h]	50	90	70	60	90	30	20	540	40	60	340	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	90	70	60	90	30	20	540	40	60	340	40
Peak Hour Factor	0.7916	0.7916	0.7916	0.9068	0.9068	0.9068	0.8681	0.8681	0.8681	0.9554	0.9554	0.9554
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	28	22	17	25	8	6	156	12	16	89	10
Total Analysis Volume [veh/h]	63	114	88	66	99	33	23	622	46	63	356	42
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	64	64	64	64	64	64
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.06	0.08	0.02	0.36	0.03	0.09	0.21	0.03
s, saturation flow rate [veh/h]	1108	1542	1062	1599	927	1710	1374	733	1710	1351
c, Capacity [veh/h]	215	344	159	357	568	1103	886	386	1103	871
d1, Uniform Delay [s]	40.20	34.72	44.95	32.88	11.07	9.90	6.52	17.89	7.96	6.50
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.60	0.65	0.24	0.13	2.09	0.11	0.91	0.78	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.59	0.42	0.37	0.04	0.56	0.05	0.16	0.32	0.05
d, Delay for Lane Group [s/veh]	40.48	35.31	45.60	33.12	11.20	11.99	6.63	18.80	8.73	6.61
Lane Group LOS	D	D	D	C	B	B	A	B	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.42	4.35	1.60	2.68	0.26	7.46	0.36	0.99	3.37	0.33
50th-Percentile Queue Length [ft/ln]	35.62	108.75	40.12	67.02	6.43	186.41	8.98	24.83	84.32	8.19
95th-Percentile Queue Length [veh/ln]	2.56	7.77	2.89	4.83	0.46	11.93	0.65	1.79	6.07	0.59
95th-Percentile Queue Length [ft/ln]	64.11	194.26	72.21	120.63	11.58	298.36	16.16	44.69	151.77	14.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.48	35.31	35.31	45.60	33.12	33.12	11.20	11.99	6.63	18.80	8.73	6.61
Movement LOS	D	D	D	D	C	C	B	B	A	B	A	A
d_A, Approach Delay [s/veh]	36.54			37.28			11.61			9.91		
Approach LOS	D			D			B			A		
d_I, Intersection Delay [s/veh]	18.36											
Intersection LOS	B											
Intersection V/C	0.495											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 17.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.409

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	50	200	20	20	150	30	20	370	30	30	400	30
Base Volume Input [veh/h]	50	200	20	20	150	30	20	370	30	30	400	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	200	20	20	150	30	20	370	30	30	400	30
Peak Hour Factor	0.8626	0.8626	0.8626	0.9385	0.9385	0.9385	0.8974	0.8974	0.8974	0.9335	0.9335	0.9335
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	58	6	5	40	8	6	103	8	8	107	8
Total Analysis Volume [veh/h]	58	232	23	21	160	32	22	412	33	32	428	32
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	20	20	20	71	71	71
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.71	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.02	0.11	0.23	0.02	0.27
s, saturation flow rate [veh/h]	1156	1856	1127	1790	1849	1573	1808
c, Capacity [veh/h]	163	367	125	354	1350	1117	1322
d1, Uniform Delay [s]	44.69	37.27	46.26	36.01	5.45	4.29	5.70
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.89	0.23	0.48	0.63	0.05	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.69	0.17	0.54	0.32	0.03	0.37
d, Delay for Lane Group [s/veh]	45.18	38.16	46.49	36.49	6.08	4.34	6.51
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.42	5.89	0.52	4.27	3.02	0.18	3.59
50th-Percentile Queue Length [ft/ln]	35.57	147.25	12.94	106.67	75.40	4.54	89.80
95th-Percentile Queue Length [veh/ln]	2.56	9.87	0.93	7.65	5.43	0.33	6.47
95th-Percentile Queue Length [ft/ln]	64.03	246.76	23.29	191.36	135.72	8.18	161.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.18	38.16	38.16	46.49	36.49	36.49	6.08	6.08	4.34	6.51	6.51	6.51
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	39.46			37.48			5.96			6.51		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.72											
Intersection LOS	B											
Intersection V/C	0.409											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 20.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.421

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	80	250	60	80	180	30	30	550	10	40	420
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	250	60	80	180	30	30	550	10	40	420	70
Peak Hour Factor	0.9010	0.9010	0.9010	0.8750	0.8750	0.8750	0.9051	0.9051	0.9051	0.9496	0.9496	0.9496
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	69	17	23	51	9	8	152	3	11	111	18
Total Analysis Volume [veh/h]	89	277	67	91	206	34	33	608	11	42	442	74
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.09	0.13	0.03	0.16	0.16	0.05	0.23	0.05
s, saturation flow rate [veh/h]	1148	1822	1051	1841	958	1900	1885	813	1900	1547
c, Capacity [veh/h]	248	516	171	521	493	1111	1102	465	1111	905
d1, Uniform Delay [s]	38.83	31.65	44.88	29.52	16.24	10.29	10.29	14.05	11.22	9.04
k, delay calibration	0.04	0.14	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	1.93	0.96	0.24	0.26	0.63	0.63	0.38	1.07	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.67	0.53	0.46	0.07	0.28	0.28	0.09	0.40	0.08
d, Delay for Lane Group [s/veh]	39.15	33.58	45.84	29.76	16.51	10.92	10.93	14.43	12.28	9.22
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.03	7.58	2.28	4.79	0.47	3.40	3.39	0.56	5.31	0.72
50th-Percentile Queue Length [ft/ln]	50.82	189.60	57.12	119.75	11.73	85.08	84.69	13.93	132.82	17.92
95th-Percentile Queue Length [veh/ln]	3.66	12.10	4.11	8.38	0.84	6.13	6.10	1.00	9.09	1.29
95th-Percentile Queue Length [ft/ln]	91.47	302.51	102.82	209.48	21.12	153.15	152.45	25.08	227.33	32.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.15	33.58	33.58	45.84	29.76	29.76	16.51	10.92	10.93	14.43	12.28	9.22
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	34.72			34.18			11.20			12.04		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.45											
Intersection LOS	C											
Intersection V/C	0.421											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.520

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	250	430	140	50	290	40	20	780	100	170	920	40
Base Volume Input [veh/h]	250	430	140	50	290	40	20	780	100	170	920	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	430	140	50	290	40	20	780	100	170	920	40
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	114	37	16	90	12	5	204	26	45	245	11
Total Analysis Volume [veh/h]	265	455	148	62	361	50	21	818	105	181	980	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.22	0.24	0.10	0.07	0.11	0.11	0.04	0.23	0.07	0.21	0.27	0.03
s, saturation flow rate [veh/h]	1223	1900	1525	939	1900	1795	578	3618	1487	874	3618	1443
c, Capacity [veh/h]	441	670	538	78	442	418	220	1590	654	483	2008	801
d1, Uniform Delay [s]	26.11	27.54	23.19	49.97	33.07	33.18	28.73	20.31	16.91	12.80	13.57	10.20
k, delay calibration	0.50	0.16	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.94	1.79	0.10	6.48	0.29	0.32	0.86	1.19	0.53	2.22	0.85	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.68	0.27	0.79	0.47	0.48	0.10	0.51	0.16	0.37	0.49	0.05
d, Delay for Lane Group [s/veh]	32.06	29.33	23.29	56.45	33.36	33.50	29.59	21.50	17.43	15.01	14.43	10.33
Lane Group LOS	C	C	C	E	C	C	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.41	9.36	2.49	1.67	4.30	4.18	0.44	6.98	1.53	2.16	6.46	0.44
50th-Percentile Queue Length [ft/ln]	135.25	233.88	62.17	41.77	107.53	104.58	11.01	174.39	38.26	54.00	161.54	10.97
95th-Percentile Queue Length [veh/ln]	9.22	14.37	4.48	3.01	7.70	7.53	0.79	11.31	2.75	3.89	10.63	0.79
95th-Percentile Queue Length [ft/ln]	230.61	359.28	111.90	75.18	192.56	188.25	19.82	282.67	68.87	97.20	265.76	19.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.06	29.33	23.29	56.45	33.42	33.50	29.59	21.50	17.43	15.01	14.43	10.33
Movement LOS	C	C	C	E	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	29.13			36.45			21.23			14.37		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	22.89											
Intersection LOS	C											
Intersection V/C	0.520											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 30.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.564

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	240	710	40	10	530	20	20	250	240	30	180	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	240	710	40	10	530	20	20	250	240	30	180	40
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	187	11	3	157	6	5	66	64	8	49	11
Total Analysis Volume [veh/h]	253	748	42	12	628	24	21	266	255	33	197	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	57	57	63	51	51	27	27	27	27
g / C, Green / Cycle	0.63	0.57	0.57	0.63	0.51	0.51	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.26	0.21	0.21	0.02	0.17	0.17	0.32	0.17	0.33	0.03
s, saturation flow rate [veh/h]	958	1900	1850	777	1900	1866	895	1461	707	1508
c, Capacity [veh/h]	638	1081	1053	523	973	955	283	399	234	411
d1, Uniform Delay [s]	8.47	11.75	11.77	7.35	14.39	14.41	32.41	32.02	31.55	27.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.48	0.07	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.85	0.97	1.01	0.08	0.94	0.96	56.29	1.15	54.31	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

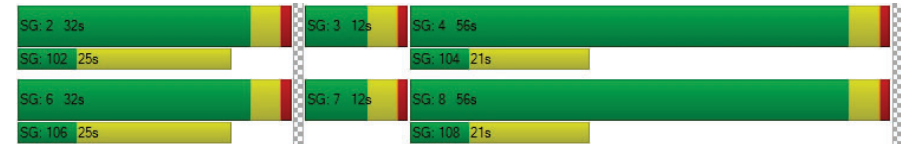
X, volume / capacity	0.40	0.37	0.37	0.02	0.34	0.34	1.01	0.64	0.98	0.11
d, Delay for Lane Group [s/veh]	10.31	12.71	12.78	7.43	15.33	15.37	88.70	33.17	85.86	27.27
Lane Group LOS	B	B	B	A	B	B	F	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.46	4.88	4.81	0.10	4.48	4.44	10.17	5.40	8.00	0.78
50th-Percentile Queue Length [ft/ln]	61.60	122.03	120.25	2.49	111.94	110.91	254.34	135.03	199.98	19.46
95th-Percentile Queue Length [veh/ln]	4.44	8.50	8.41	0.18	7.95	7.89	15.53	9.21	12.64	1.40
95th-Percentile Queue Length [ft/ln]	110.88	212.61	210.17	4.48	198.69	197.27	388.23	230.31	315.95	35.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.31	12.75	12.78	7.43	15.35	15.37	88.70	88.70	33.17	85.86	85.86	27.27
Movement LOS	B	B	B	A	B	B	F	F	C	F	F	C
d_A, Approach Delay [s/veh]	12.16			15.21			62.58			76.45		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	30.77											
Intersection LOS	C											
Intersection V/C	0.564											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 41.2
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.659

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	120	810	180	130	560	40	20	530	220	180	300	260
Base Volume Input [veh/h]	120	810	180	130	560	40	20	530	220	180	300	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	810	180	130	560	40	20	530	220	180	300	260
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	208	46	34	148	11	6	147	61	50	83	72
Total Analysis Volume [veh/h]	123	833	185	137	592	42	22	589	245	198	330	286
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	54	43	43	54	43	43	22	22	22	36	36	36
g / C, Green / Cycle	0.54	0.43	0.43	0.54	0.43	0.43	0.22	0.22	0.22	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.13	0.28	0.28	0.18	0.17	0.17	0.02	0.23	0.25	0.19	0.17	0.20
s, saturation flow rate [veh/h]	978	1900	1741	779	1900	1838	1005	1900	1577	1047	1900	1453
c, Capacity [veh/h]	549	818	750	407	821	794	139	423	351	340	689	527
d1, Uniform Delay [s]	11.86	22.40	22.62	14.51	19.42	19.46	44.56	38.89	38.89	25.68	24.59	25.30
k, delay calibration	0.24	0.50	0.50	0.50	0.50	0.50	0.04	0.23	0.29	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	3.84	4.48	2.23	1.40	1.47	0.20	39.74	77.13	7.12	0.19	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

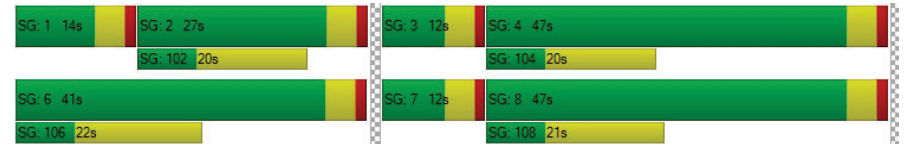
X, volume / capacity	0.22	0.64	0.66	0.34	0.39	0.39	0.16	1.04	1.13	0.58	0.48	0.54
d, Delay for Lane Group [s/veh]	12.31	26.25	27.10	16.74	20.82	20.94	44.75	78.63	116.02	32.79	24.78	25.66
Lane Group LOS	B	C	C	B	C	C	D	F	F	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.36	10.26	9.84	1.70	5.30	5.21	0.53	14.83	15.95	3.96	5.95	5.33
50th-Percentile Queue Length [ft/ln]	33.92	256.53	246.00	42.47	132.50	130.17	13.14	370.80	398.77	99.10	148.76	133.15
95th-Percentile Queue Length [veh/ln]	2.44	15.51	14.98	3.06	9.08	8.95	0.95	21.58	23.99	7.14	9.95	9.11
95th-Percentile Queue Length [ft/ln]	61.06	387.87	374.61	76.45	226.90	223.72	23.65	539.57	599.63	178.38	248.77	227.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.31	26.56	27.10	16.74	20.87	20.94	44.75	88.20	116.02	32.79	24.78	25.66
Movement LOS	B	C	C	B	C	C	D	F	F	C	C	C
d_A, Approach Delay [s/veh]	25.11			20.14			95.04			27.04		
Approach LOS	C			C			F			C		
d_I, Intersection Delay [s/veh]	41.19											
Intersection LOS	D											
Intersection V/C	0.659											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 38.1
Level Of Service: D
Volume to Capacity (v/c): 0.643

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
	210	910	70	40	920	60	90	230	170	80	180	60
Base Volume Input [veh/h]	210	910	70	40	920	60	90	230	170	80	180	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	910	70	40	920	60	90	230	170	80	180	60
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	247	19	11	250	16	23	60	44	22	49	16
Total Analysis Volume [veh/h]	228	987	76	44	1001	65	93	238	176	86	194	65
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	11	51	51	36	36	36	26	26	26	35	35
g / C, Green / Cycle	0.11	0.51	0.51	0.36	0.36	0.36	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.13	0.28	0.29	0.08	0.28	0.29	0.08	0.13	0.13	0.20	0.05
s, saturation flow rate [veh/h]	1810	1900	1806	538	1900	1816	1161	1900	1352	1404	1366
c, Capacity [veh/h]	194	978	930	149	688	658	113	488	347	499	482
d1, Uniform Delay [s]	44.65	16.40	16.59	39.97	28.40	28.68	49.23	31.57	31.75	24.85	21.97
k, delay calibration	0.24	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	102.83	2.22	2.48	4.98	8.68	9.98	5.62	0.28	0.43	4.50	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.18	0.55	0.57	0.30	0.78	0.80	0.82	0.49	0.51	0.56	0.13
d, Delay for Lane Group [s/veh]	147.48	18.62	19.07	44.95	37.08	38.65	54.84	31.85	32.17	29.35	22.02
Lane Group LOS	F	B	B	D	D	D	D	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	10.29	8.55	8.50	1.21	12.80	12.84	2.47	4.80	3.59	5.51	1.02
50th-Percentile Queue Length [ft/ln]	257.21	213.69	212.46	30.19	320.00	320.92	61.75	120.11	89.65	137.84	25.49
95th-Percentile Queue Length [veh/ln]	16.54	13.34	13.28	2.17	18.67	18.71	4.45	8.40	6.45	9.36	1.84
95th-Percentile Queue Length [ft/ln]	413.50	333.56	331.98	54.34	466.69	467.81	111.15	209.98	161.37	234.11	45.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	147.48	18.83	19.07	44.95	37.81	38.65	54.84	31.85	32.17	29.35	29.35	22.02
Movement LOS	F	B	B	D	D	D	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	41.56			38.14			36.18			27.97		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	38.11											
Intersection LOS	D											
Intersection V/C	0.643											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 49.8
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.761

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	210	1020	180	20	1070	70	6	130	310	66	290	160
Base Volume Input [veh/h]	210	1020	180	20	1070	70	6	130	310	66	290	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	1020	180	20	1070	70	6	130	310	66	290	160
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	269	47	5	279	18	2	38	92	18	82	45
Total Analysis Volume [veh/h]	222	1076	190	21	1115	73	7	154	366	70	326	180
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups								2				
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	98	98	98	98	98	98	98	98
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	14	41	41	3	30	30	40	40
g / C, Green / Cycle	0.14	0.42	0.42	0.03	0.31	0.31	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.12	0.34	0.35	0.01	0.32	0.32	0.32	0.29
s, saturation flow rate [veh/h]	1810	1900	1758	1810	1900	1832	1638	1770
c, Capacity [veh/h]	255	789	731	60	584	563	671	726
d1, Uniform Delay [s]	41.02	25.24	25.77	46.14	33.78	33.78	24.88	23.78
k, delay calibration	0.21	0.50	0.50	0.04	0.45	0.46	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.37	9.17	11.87	1.30	42.38	48.39	8.49	5.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

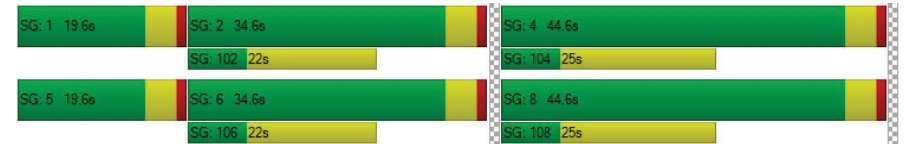
X, volume / capacity	0.87	0.82	0.85	0.35	1.03	1.04	0.77	0.70
d, Delay for Lane Group [s/veh]	56.40	34.41	37.64	47.44	76.15	82.17	33.37	29.27
Lane Group LOS	E	C	D	D	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	6.25	14.64	14.82	0.52	20.27	20.49	11.56	10.39
50th-Percentile Queue Length [ft/ln]	156.26	366.00	370.51	12.94	506.82	512.21	289.10	259.71
95th-Percentile Queue Length [veh/ln]	10.35	20.91	21.13	0.93	28.15	28.70	17.14	15.67
95th-Percentile Queue Length [ft/ln]	258.76	522.87	528.35	23.29	703.63	717.40	428.52	391.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.40	35.70	37.64	47.44	78.93	82.17	0.00	33.37	33.37	0.00	29.27	29.27
Movement LOS	E	D	D	D	E	F		C	C		C	C
d_A, Approach Delay [s/veh]	39.04			78.58			33.37			29.27		
Approach LOS	D			E			C			C		
d_I, Intersection Delay [s/veh]	49.76											
Intersection LOS	D											
Intersection V/C	0.761											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 63.8
 Level Of Service: E
 Volume to Capacity (v/c): 0.865

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	290	710	0	1460	30	0	0	0	0	750	660
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	710	0	1460	30	0	0	0	0	750	660	780
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	204	0	384	8	0	0	0	0	206	182	215
Total Analysis Volume [veh/h]	333	816	0	1538	32	0	0	0	0	825	726	858
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.29	0.28	0.34	0.33	0.35	0.39
s, saturation flow rate [veh/h]	1810	3618	3618	1877	1810	1868	1587	1573
c, Capacity [veh/h]	337	2123	1310	680	609	629	534	529
d1, Uniform Delay [s]	48.62	13.21	34.33	33.83	39.77	39.37	39.77	39.77
k, delay calibration	0.39	0.50	0.50	0.50	0.45	0.43	0.49	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	40.30	0.53	5.18	8.22	37.73	28.62	52.22	92.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	0.38	0.80	0.77	1.01	0.98	1.05	1.16
d, Delay for Lane Group [s/veh]	88.92	13.74	39.51	42.05	77.50	67.99	91.99	132.7
Lane Group LOS	F	B	D	D	F	E	F	F
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	13.66	5.89	14.47	14.89	23.39	22.04	22.66	28.45
50th-Percentile Queue Length [ft/ln]	341.48	147.25	361.86	372.17	584.7	550.9	566.5	711.3
95th-Percentile Queue Length [veh/ln]	19.72	9.87	20.71	21.21	31.58	29.74	31.49	40.95
95th-Percentile Queue Length [ft/ln]	493.01	246.76	517.85	530.36	789.5	743.4	787.2	1023.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	88.92	13.74	0.00	0.00	40.32	42.05	0.00	0.00	0.00	74.93	78.53	121.36
Movement LOS	F	B			D	D				E	E	F
d_A, Approach Delay [s/veh]	35.53		40.36		0.00		92.56					
Approach LOS	D		D		A		F					
d_I, Intersection Delay [s/veh]	63.80											
Intersection LOS	E											
Intersection V/C	0.865											

Sequence

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



Intersection Level Of Service Report

Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 59.2
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.900

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	960	660	900	1300	0	80	90	450	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	960	660	900	1300	0	80	90	450	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	266	183	242	349	0	23	26	129	0	0	0
Total Analysis Volume [veh/h]	0	1065	732	966	1396	0	92	103	516	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	39	39	39	42	85	25	25	25
g / C, Green / Cycle	0.32	0.32	0.32	0.35	0.71	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.25	0.30	0.30	0.27	0.39	0.06	0.05	0.33
s, saturation flow rate [veh/h]	3618	1505	1505	3514	3618	1816	1729	1579
c, Capacity [veh/h]	1171	487	487	1228	2574	385	366	334
d1, Uniform Delay [s]	36.49	39.10	39.10	35.02	8.13	39.44	39.43	47.28
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	3.20	3.20	5.13	0.83	0.13	0.14	258.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.92	0.92	0.79	0.54	0.26	0.26	1.54
d, Delay for Lane Group [s/veh]	36.90	42.30	42.30	40.15	8.95	39.57	39.57	306.18
Lane Group LOS	D	D	D	D	A	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.68	12.87	12.87	13.40	7.94	2.47	2.34	33.87
50th-Percentile Queue Length [ft/ln]	291.90	321.82	321.82	334.94	198.56	61.67	58.52	846.79
95th-Percentile Queue Length [veh/ln]	17.28	18.76	18.76	19.40	12.56	4.44	4.21	52.50
95th-Percentile Queue Length [ft/ln]	432.00	468.92	468.92	485.02	314.11	111.00	105.33	1312.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	36.90	42.30	40.15	8.95	0.00	39.57	39.57	306.18	0.00	0.00	0.00
Movement LOS		D	D	D	A		D	D	F			
d_A, Approach Delay [s/veh]		39.60		21.71		233.06				0.00		
Approach LOS		D		C		F				A		
d_I, Intersection Delay [s/veh]		59.17										
Intersection LOS		E										
Intersection V/C		0.900										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 61.0
Level Of Service: E
Volume to Capacity (v/c): 0.657

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	980	210	130	900	250	130
Base Volume Input [veh/h]	980	210	130	900	250	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	980	210	130	900	250	130
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	273	59	41	282	72	37
Total Analysis Volume [veh/h]	1094	234	163	1129	287	149
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
12, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.30	0.17	0.31	0.31	0.34	0.20
s, saturation flow rate [veh/h]	3618	1353	522	3618	832	734
c, Capacity [veh/h]	2509	938	352	2509	145	128
d1, Uniform Delay [s]	6.73	5.68	15.55	6.83	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.64	4.32	0.59	462.90	96.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.25	0.46	0.45	1.98	1.16
d, Delay for Lane Group [s/veh]	7.29	6.32	19.87	7.41	504.17	137.71
Lane Group LOS	A	A	B	A	F	F
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.60	1.76	2.78	4.82	22.17	6.51
50th-Percentile Queue Length [ft/ln]	115.04	43.92	69.56	120.45	554.16	162.78
95th-Percentile Queue Length [veh/ln]	8.12	3.16	5.01	8.42	37.11	11.38
95th-Percentile Queue Length [ft/ln]	203.00	79.05	125.21	210.45	927.67	284.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.29	6.32	19.87	7.41	504.17	137.71
Movement LOS	A	A	B	A	F	F
d_A, Approach Delay [s/veh]	7.12		8.99		378.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	60.95					
Intersection LOS	E					
Intersection V/C	0.657					

Sequence

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



Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 99.8
Level Of Service: F
Volume to Capacity (v/c): 0.661

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	20	360	260	140	160	0	30	330	0	160	300	20
Base Volume Input [veh/h]	20	360	260	140	160	0	30	330	0	160	300	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	360	260	140	160	0	30	330	0	160	300	20
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	101	73	39	45	0	8	86	0	47	88	6
Total Analysis Volume [veh/h]	22	404	292	157	180	0	31	346	0	187	351	23
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	50	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.55	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.42	0.17	0.09	0.03	0.18	0.18	0.21
s, saturation flow rate [veh/h]	1273	1677	902	1900	1024	1900	1051	1814
c, Capacity [veh/h]	857	872	427	1047	80	347	80	331
d1, Uniform Delay [s]	6.48	17.75	13.42	10.04	45.04	36.79	45.04	36.82
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.05
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	7.55	2.43	0.36	1.13	13.02	602.53	62.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.80	0.37	0.17	0.39	1.00	2.33	1.13
d, Delay for Lane Group [s/veh]	6.48	25.30	15.85	10.39	46.17	49.81	647.57	98.84
Lane Group LOS	A	C	B	B	D	D	F	F
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.14	12.43	1.40	1.76	0.71	8.69	15.18	12.74
50th-Percentile Queue Length [ft/ln]	3.50	310.73	34.96	44.02	17.78	217.15	379.44	318.48
95th-Percentile Queue Length [veh/ln]	0.25	18.21	2.52	3.17	1.28	13.52	27.01	19.71
95th-Percentile Queue Length [ft/ln]	6.29	455.27	62.92	79.24	32.00	337.98	675.20	492.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.48	25.30	25.30	15.85	10.39	10.39	46.17	49.81	49.81	647.57	98.84	98.84
Movement LOS	A	C	C	B	B	B	D	D	D	F	F	F
d_A, Approach Delay [s/veh]	24.72			12.94			49.52			281.75		
Approach LOS	C			B			D			F		
d_I, Intersection Delay [s/veh]	99.77											
Intersection LOS	F											
Intersection V/C	0.661											

Sequence

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



Intersection Level Of Service Report
Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 41.7
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.574

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Approach	Northbound				Southbound				Eastbound				Westbound				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Base Volume Input [veh/h]	20	0	940	130	290	1050	0	32	1085	209	90	0	220				
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	940	130	290	1050	0	32	1085	209	90	0	220				
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012		
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	252	35	80	289	0	8	271	52	28	0	69				
Total Analysis Volume [veh/h]	20	0	1009	139	320	1158	0	32	1085	209	112	0	275				
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	103	103	117	110	23	23
g / C, Green / Cycle	0.02	0.69	0.69	0.78	0.73	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.28	0.09	0.46	0.32	0.09	0.24
s, saturation flow rate [veh/h]	1810	3618	1584	694	3618	1231	1132
c, Capacity [veh/h]	34	2495	1093	544	2651	192	177
d1, Uniform Delay [s]	72.93	10.01	7.91	6.97	7.87	58.69	63.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.73	0.49	0.24	4.61	0.53	1.04	275.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.40	0.13	0.59	0.44	0.58	1.56
d, Delay for Lane Group [s/veh]	78.66	10.50	8.15	11.58	8.40	59.74	338.86
Lane Group LOS	E	B	A	B	A	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.82	7.19	1.60	3.10	7.21	4.03	20.30
50th-Percentile Queue Length [ft/ln]	20.57	179.69	40.03	77.40	180.22	100.77	507.53
95th-Percentile Queue Length [veh/ln]	1.48	11.58	2.88	5.57	11.61	7.26	32.67
95th-Percentile Queue Length [ft/ln]	37.02	289.61	72.06	139.32	290.30	181.38	816.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	78.66	0.00	10.50	8.15	11.58	8.40	0.00	0.00	0.00	0.00	59.74	0.00	338.86
Movement LOS	E		B	A	B	A					E		F
d_A, Approach Delay [s/veh]	11.39			9.08			0.00			258.08			
Approach LOS	B			A			A			F			
d_I, Intersection Delay [s/veh]	41.74												
Intersection LOS	D												
Intersection V/C	0.574												

Sequence

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



FUTURE (2025) PLUS PROJECT CONDITIONS

Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 66.7
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.118

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	20	2660	2	370	3570	30	10	10	10	170	20	260
Base Volume Input [veh/h]	20	2660	2	370	3570	30	10	10	10	170	20	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	4	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	2660	2	374	3570	30	10	10	10	174	20	263
Peak Hour Factor	0.8779	0.8779	1.0000	0.9383	0.9383	0.9383	0.8500	0.8500	0.8500	0.9161	0.9161	0.9161
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	757	1	100	951	8	3	3	3	47	5	72
Total Analysis Volume [veh/h]	23	3030	2	399	3805	32	12	12	12	190	22	287
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	240
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	6	25	0	6	25	0	6	6	0	0	6	6	
Maximum Green [s]	15	142	0	60	187	0	38	38	0	0	38	38	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	2.0	2.0	
Split [s]	15	142	0	60	187	0	40	40	0	0	40	40	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	5	5	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	13	13	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	3.2	3.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	Yes	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	240	240	240	240	240	240	240	240
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	5.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	3.20	0.00
g_i, Effective Green Time [s]	5	135	55	185	185	36	35	95
g / C, Green / Cycle	0.02	0.56	0.23	0.77	0.77	0.15	0.15	0.39
(v / s)_i Volume / Saturation Flow Rate	0.01	0.59	0.22	0.70	0.70	0.18	0.31	0.18
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1892	200	679	1594
c, Capacity [veh/h]	36	2906	413	2783	1455	50	127	629
d1, Uniform Delay [s]	116.81	52.68	91.81	20.99	21.20	92.60	106.82	53.65
k, delay calibration	0.04	0.50	0.36	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.81	29.18	30.36	5.41	9.84	62.49	333.90	2.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

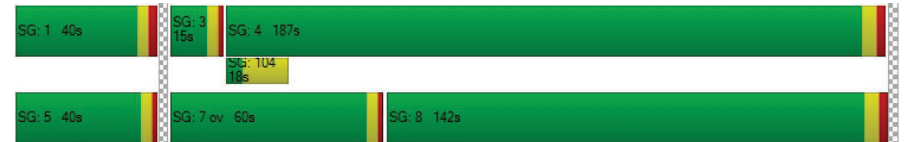
X, volume / capacity	0.64	1.04	0.97	0.90	0.91	0.72	1.67	0.46
d, Delay for Lane Group [s/veh]	123.62	81.86	122.17	26.40	31.04	155.09	440.72	56.03
Lane Group LOS	F	F	F	C	C	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.51	64.55	28.02	50.82	55.67	3.16	19.89	13.62
50th-Percentile Queue Length [ft/ln]	37.71	1613.83	700.42	1270.61	1391.86	79.08	497.31	340.48
95th-Percentile Queue Length [veh/ln]	2.71	80.68	36.70	62.52	67.91	5.69	32.46	19.67
95th-Percentile Queue Length [ft/ln]	67.87	2017.07	917.44	1562.91	1697.79	142.34	811.42	491.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	123.62	81.86	0.00	122.17	27.97	31.04	155.09	155.09	155.09	440.72	440.72	56.03
Movement LOS	F	F		F	C	C	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	82.18		36.87			155.09		219.46				
Approach LOS	F		D			F		F				
d_I, Intersection Delay [s/veh]	66.74											
Intersection LOS	E											
Intersection V/C	1.118											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 59.9
Level Of Service: E
Volume to Capacity (v/c): 0.751

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration	T T			T T			T T			T T			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
Base Volume Input [veh/h]	210	350	50	20	380	120	40	100	380	0	30	110	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	7	0	0	7	0	0	0	4	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	217	357	50	20	387	120	40	100	384	0	30	110	50
Peak Hour Factor	0.8497	0.8497	0.8497	0.9162	0.9162	0.9162	0.8326	0.8326	0.8326	1.0000	0.941	0.941	0.941
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	105	15	5	106	33	12	30	115	0	8	29	13
Total Analysis Volume [veh/h]	255	420	59	22	422	131	48	120	461	0	32	117	53
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	32			62			86			124			
Bicycle Volume [bicycles/h]	1			14			14			39			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	77.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	2	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.02	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.14	0.22	0.04	0.01	0.22	0.09	0.34	0.30	0.22	0.04
s, saturation flow rate [veh/h]	1810	1900	1422	1810	1900	1440	497	1542	667	1213
c, Capacity [veh/h]	189	1166	872	42	1012	767	138	579	167	224
d1, Uniform Delay [s]	44.75	9.58	7.78	48.26	14.04	12.02	39.72	27.80	37.60	34.71
k, delay calibration	0.18	0.50	0.50	0.04	0.50	0.50	0.50	0.42	0.21	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	169.59	0.87	0.15	3.68	1.27	0.48	145.78	9.32	24.78	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

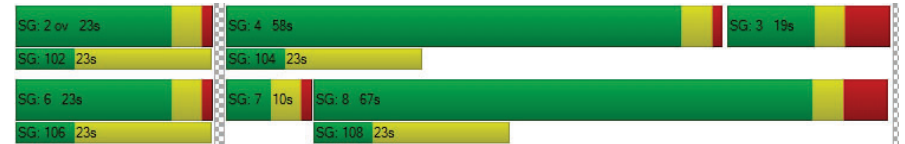
X, volume / capacity	1.35	0.36	0.07	0.52	0.42	0.17	1.22	0.80	0.89	0.24
d, Delay for Lane Group [s/veh]	214.35	10.45	7.93	51.94	15.31	12.50	185.51	37.12	62.38	34.91
Lane Group LOS	F	B	A	D	B	B	F	D	E	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	13.54	4.50	0.52	0.58	5.82	1.56	9.07	11.17	4.31	1.10
50th-Percentile Queue Length [ft/ln]	338.52	112.49	12.95	14.58	145.58	38.88	226.71	279.21	107.71	27.38
95th-Percentile Queue Length [veh/ln]	21.76	7.98	0.93	1.05	9.78	2.80	15.24	16.65	7.71	1.97
95th-Percentile Queue Length [ft/ln]	543.94	199.46	23.30	26.24	244.52	69.98	380.88	416.22	192.81	49.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	214.35	10.45	7.93	51.94	15.31	12.50	185.51	185.51	37.12	62.38	62.38	62.38	34.91
Movement LOS	F	B	A	D	B	B	F	F	D	E	E	E	C
d_A, Approach Delay [s/veh]	81.08			16.07			76.75			55.17			
Approach LOS	F			B			E			E			
d_I, Intersection Delay [s/veh]	59.89												
Intersection LOS	E												
Intersection V/C	0.751												

Sequence

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



Intersection Level Of Service Report

Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 13.2
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.337

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	440	260	290	520	150	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	5	0	11	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	454	265	290	531	150	160
Peak Hour Factor	0.9089	0.9089	0.8739	0.8739	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	73	83	152	42	45
Total Analysis Volume [veh/h]	500	292	332	608	169	180
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31		38		61	
Bicycle Volume [bicycles/h]	1		2		18	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	59	59	72	72	15	15	15
g / C, Green / Cycle	0.59	0.59	0.72	0.72	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.14	0.19	0.32	0.17	0.07	0.07	0.08
s, saturation flow rate [veh/h]	3618	1546	1050	3618	1695	1687	1435
c, Capacity [veh/h]	2136	913	803	2609	249	248	211
d1, Uniform Delay [s]	9.73	10.33	5.13	4.67	39.23	39.05	39.42
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.92	1.57	0.21	0.56	0.51	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

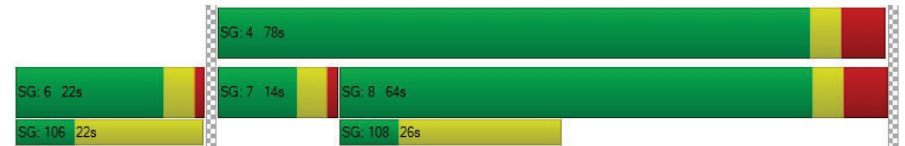
X, volume / capacity	0.23	0.32	0.41	0.23	0.49	0.47	0.53
d, Delay for Lane Group [s/veh]	9.98	11.26	6.70	4.88	39.79	39.55	40.18
Lane Group LOS	A	B	A	A	D	D	D
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.54	3.29	2.33	1.85	2.80	2.61	2.54
50th-Percentile Queue Length [ft/ln]	63.42	82.20	58.17	46.30	69.99	65.26	63.51
95th-Percentile Queue Length [veh/ln]	4.57	5.92	4.19	3.33	5.04	4.70	4.57
95th-Percentile Queue Length [ft/ln]	114.16	147.96	104.71	83.34	125.97	117.47	114.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.98	11.26	6.70	4.88	39.72	39.95
Movement LOS	A	B	A	A	D	D
d_A, Approach Delay [s/veh]	10.45		5.53		39.83	
Approach LOS	B		A		D	
d_I, Intersection Delay [s/veh]	13.16					
Intersection LOS	B					
Intersection V/C	0.337					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 7.8
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.307

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	770	90	90	570	30	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	19	34	12	-1	0	-1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	789	124	102	569	30	59
Peak Hour Factor	0.9190	0.9190	0.9144	0.9144	0.7609	0.7609
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	34	28	156	10	19
Total Analysis Volume [veh/h]	859	135	112	622	39	78
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34		38		77	
Bicycle Volume [bicycles/h]	3		4		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	72	72	72	72	15
g / C, Green / Cycle	0.72	0.72	0.72	0.72	0.15
(v / s)_i Volume / Saturation Flow Rate	0.24	0.09	0.17	0.17	0.07
s, saturation flow rate [veh/h]	3618	1495	651	3618	1675
c, Capacity [veh/h]	2592	1071	463	2592	253
d1, Uniform Delay [s]	5.26	4.41	9.66	4.84	38.63
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.24	1.24	0.22	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

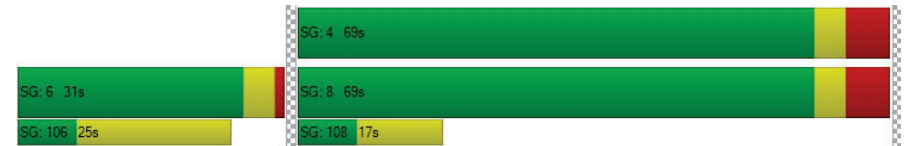
X, volume / capacity	0.33	0.13	0.24	0.24	0.46
d, Delay for Lane Group [s/veh]	5.60	4.65	10.90	5.06	39.11
Lane Group LOS	A	A	B	A	D
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.93	0.81	1.27	1.95	2.60
50th-Percentile Queue Length [ft/ln]	73.25	20.29	31.78	48.76	65.11
95th-Percentile Queue Length [veh/ln]	5.27	1.46	2.29	3.51	4.69
95th-Percentile Queue Length [ft/ln]	131.86	36.52	57.20	87.76	117.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.60	4.65	10.90	5.06	39.11	39.11
Movement LOS	A	A	B	A	D	D
d_A, Approach Delay [s/veh]	5.48		5.95		39.11	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	7.80					
Intersection LOS	A					
Intersection V/C	0.307					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	10.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.339

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	780	170	90	470	80	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	-4	-1	0	6	25
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	808	166	89	470	86	95
Peak Hour Factor	0.9233	0.9233	0.9315	0.9315	0.7866	0.7866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	219	45	24	126	27	30
Total Analysis Volume [veh/h]	875	180	96	505	109	121
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	78		64		77	
Bicycle Volume [bicycles/h]	5		4		17	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	64	64	77	77	10	23
g / C, Green / Cycle	0.64	0.64	0.77	0.77	0.10	0.23
(v / s)_i Volume / Saturation Flow Rate	0.24	0.12	0.12	0.14	0.08	0.08
s, saturation flow rate [veh/h]	3618	1483	811	3618	1378	1440
c, Capacity [veh/h]	2310	947	657	2783	136	330
d1, Uniform Delay [s]	8.61	7.43	3.61	3.09	44.09	32.41
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.45	0.47	0.14	4.11	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

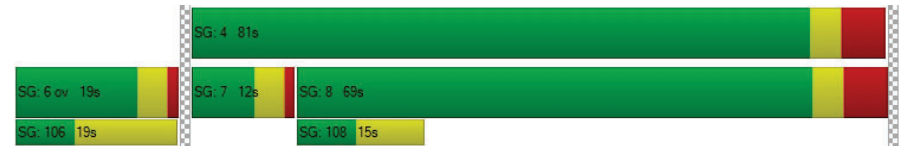
X, volume / capacity	0.38	0.19	0.15	0.18	0.80	0.37
d, Delay for Lane Group [s/veh]	9.08	7.87	4.08	3.24	48.20	32.66
Lane Group LOS	A	A	A	A	D	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.28	1.58	0.44	1.09	2.78	2.47
50th-Percentile Queue Length [ft/ln]	107.04	39.58	11.06	27.22	69.42	61.72
95th-Percentile Queue Length [veh/ln]	7.68	2.85	0.80	1.96	5.00	4.44
95th-Percentile Queue Length [ft/ln]	191.88	71.24	19.91	48.99	124.95	111.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.08	7.87	4.08	3.24	48.20	32.66
Movement LOS	A	A	A	A	D	C
d_A, Approach Delay [s/veh]	8.88		3.37		40.02	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				10.92		
Intersection LOS				B		
Intersection V/C				0.339		

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 26.1
Level Of Service: C
Volume to Capacity (v/c): 0.396

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	40	870	142	67	590	20	20	13	20	110	20	129
Base Volume Input [veh/h]	40	870	142	67	590	20	20	13	20	110	20	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	0	0	6	0	0	0	0	0	0	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	885	142	67	596	20	20	13	20	110	20	129
Peak Hour Factor	0.9547	0.9547	0.8613	0.9469	0.9024	0.9024	0.6667	0.5455	0.6667	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	232	41	18	165	6	7	6	7	32	6	38
Total Analysis Volume [veh/h]	42	927	165	71	660	22	30	24	30	129	24	152
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			17		
Bicycle Volume [bicycles/h]	20			23			24			47		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	41.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	51	0	0	39	27	17	0	39	12	25	17
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	65	65	56	56	6	15	15
g / C, Green / Cycle	0.54	0.54	0.47	0.47	0.05	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.05	0.26	0.18	0.18	0.04	0.08	0.10
s, saturation flow rate [veh/h]	874	3618	1900	1873	1707	1823	1457
c, Capacity [veh/h]	464	1943	888	875	87	222	178
d1, Uniform Delay [s]	14.13	17.29	20.77	20.83	56.06	50.52	51.67
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	0.84	1.26	1.31	3.66	1.42	4.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

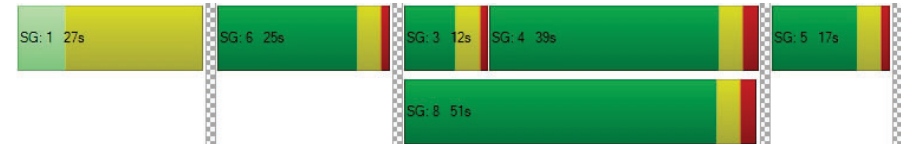
X, volume / capacity	0.09	0.48	0.38	0.39	0.69	0.69	0.86
d, Delay for Lane Group [s/veh]	14.16	18.13	22.03	22.14	59.72	51.94	56.15
Lane Group LOS	B	B	C	C	E	D	E
Critical Lane Group	No	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.54	8.04	6.49	6.51	1.86	4.53	4.74
50th-Percentile Queue Length [ft/ln]	13.57	200.98	162.20	162.87	46.58	113.35	118.48
95th-Percentile Queue Length [veh/ln]	0.98	12.69	10.67	10.70	3.35	8.03	8.31
95th-Percentile Queue Length [ft/ln]	24.43	317.23	266.64	267.52	83.84	200.65	207.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.16	18.13	0.00	0.00	22.08	22.14	59.72	0.00	59.72	51.94	51.94	56.15
Movement LOS	B	B			C	C	E		E	D	D	E
d_A, Approach Delay [s/veh]	17.96		22.08			59.72		54.04				
Approach LOS	B		C			E		D				
d_I, Intersection Delay [s/veh]	26.06											
Intersection LOS	C											
Intersection V/C	0.396											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 25.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.467

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	500	770	690	40	110	440
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	6	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	500	785	696	40	110	440
Peak Hour Factor	0.9091	0.9091	0.9306	0.9306	0.8533	0.8533
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	216	187	11	32	129
Total Analysis Volume [veh/h]	550	864	748	43	129	516
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		0		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	71	71	71	25	24
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	75	75	75	10	35
g / C, Green / Cycle	0.17	0.63	0.63	0.63	0.09	0.29
(v / s)_i Volume / Saturation Flow Rate	0.16	0.24	0.21	0.03	0.07	0.19
s, saturation flow rate [veh/h]	3514	3618	3618	1615	1810	2686
c, Capacity [veh/h]	597	2274	2274	1015	156	792
d1, Uniform Delay [s]	48.97	10.87	10.43	8.50	53.89	36.92
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	0.48	0.39	0.08	4.15	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

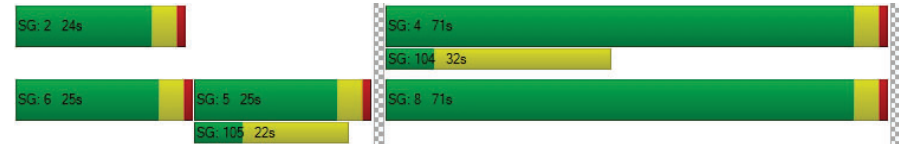
X, volume / capacity	0.92	0.38	0.33	0.04	0.83	0.65
d, Delay for Lane Group [s/veh]	51.59	11.35	10.82	8.58	58.04	37.26
Lane Group LOS	D	B	B	A	E	D
Critical Lane Group	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.29	5.54	4.60	0.44	4.19	7.05
50th-Percentile Queue Length [ft/ln]	207.35	138.48	114.92	11.03	104.87	176.26
95th-Percentile Queue Length [veh/ln]	13.02	9.40	8.11	0.79	7.55	11.41
95th-Percentile Queue Length [ft/ln]	325.43	234.98	202.83	19.86	188.77	285.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.59	11.35	10.82	8.58	58.04	37.26
Movement LOS	D	B	B	A	E	D
d_A, Approach Delay [s/veh]	27.00		10.69		41.41	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	25.74					
Intersection LOS	C					
Intersection V/C	0.467					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 21.1
Level Of Service: C
Volume to Capacity (v/c): 0.580

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
	Northbound				Northeastbound				Southwestbound			
Approach												
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	40	90	10	3	190	98	90	270
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	40	90	10	3	190	98	90	281
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.9268	0.9268	0.9268	1.0000	0.9489	0.9471	0.9471	0.9471
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	11	24	3	1	50	26	24	74
Total Analysis Volume [veh/h]	0	0	0	0	43	97	11	3	200	103	95	297
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	12				27				48			
Bicycle Volume [bicycles/h]	10				7				36			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0
Maximum Green [s]	0	0	0	0	15	30	30	0	7	0	30	0
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0
Split [s]	0	0	0	0	19	35	43	0	12	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	22	13	0	0	0	20	0
Rest in Walk					No						No	
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0
Minimum Recall					No				Yes		No	
Maximum Recall					No				No		No	
Pedestrian Recall					No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	31	31	31
g / C, Green / Cycle	0.21	0.21	0.21	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.03	0.14	0.05	0.20
s, saturation flow rate [veh/h]	1290	1900	1805	1470	1900	1516
c, Capacity [veh/h]	276	395	375	593	648	517
d1, Uniform Delay [s]	33.50	29.11	29.14	22.03	20.60	24.34
k, delay calibration	0.11	0.11	0.11	0.50	0.11	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.16	0.17	1.54	0.10	1.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.14	0.14	0.34	0.15	0.57
d, Delay for Lane Group [s/veh]	33.76	29.27	29.32	23.57	20.70	25.60
Lane Group LOS	C	C	C	C	C	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.83	0.95	0.94	3.26	1.36	5.13
50th-Percentile Queue Length [ft/ln]	20.64	23.79	23.60	81.58	33.93	128.15
95th-Percentile Queue Length [veh/ln]	1.49	1.71	1.70	5.87	2.44	8.84
95th-Percentile Queue Length [ft/ln]	37.15	42.81	42.47	146.85	61.08	220.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	33.76	29.29	29.32	0.00	23.57	0.00	20.70	25.60
Movement LOS					C	C	C		C		C	C
d_A, Approach Delay [s/veh]	0.00				30.56				24.13			
Approach LOS	A				C				C			
d_I, Intersection Delay [s/veh]	21.13											
Intersection LOS	C											
Intersection V/C	0.580											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	30	1130	210	170	790	65	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	-1	5	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	30	1134	210	169	795	65	20
Peak Hour Factor	1.0000	0.9525	0.9525	0.9525	0.9353	0.9353	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	8	298	55	45	213	17	5
Total Analysis Volume [veh/h]	1	31	1191	220	181	850	69	21
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	46				31			
Bicycle Volume [bicycles/h]	10				12			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	58.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	30	30	15	30	0	30
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	24	35	19	43	0	35
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	22	0	13	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			Yes		No	Yes		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	39	39	39	50	50	50
g / C, Green / Cycle	0.43	0.43	0.43	0.56	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.05	0.33	0.14	0.25	0.23	0.23
s, saturation flow rate [veh/h]	645	3618	1535	723	1900	1878
c, Capacity [veh/h]	254	1563	663	386	1058	1046
d1, Uniform Delay [s]	25.18	21.65	16.95	15.80	11.48	11.49
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	3.56	1.34	4.06	1.19	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

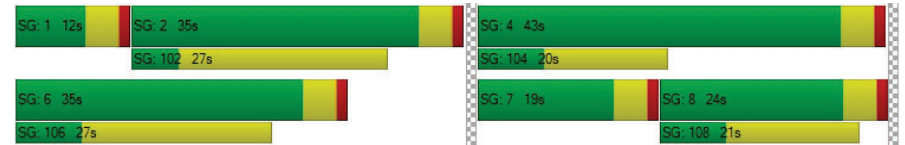
X, volume / capacity	0.12	0.76	0.33	0.47	0.41	0.41
d, Delay for Lane Group [s/veh]	26.16	25.21	18.29	19.86	12.67	12.70
Lane Group LOS	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.57	10.80	3.15	2.08	5.00	4.97
50th-Percentile Queue Length [ft/ln]	14.22	289.95	78.67	52.02	125.02	124.19
95th-Percentile Queue Length [veh/ln]	1.02	16.19	5.66	3.75	8.67	8.62
95th-Percentile Queue Length [ft/ln]	25.59	404.68	141.60	93.64	216.70	215.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	26.16	25.21	18.29	19.86	12.69	0.00	12.70
Movement LOS		C	C	B	B	B		B
d_A, Approach Delay [s/veh]	24.18			13.92				
Approach LOS	C			B				
d_I, Intersection Delay [s/veh]	21.13							
Intersection LOS	C							
Intersection V/C	0.580							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 75.4
 Level Of Service: E
 Volume to Capacity (v/c): 0.609

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00		
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	1	0	0	0		
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	30	50	40	0	110	80	25	20	260	80	130	290	110		
Base Volume Input [veh/h]	0	30	50	40	0	110	80	25	20	260	80	130	290	110		
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Site-Generated Trips [veh/h]	0	0	0	-1	0	0	0	0	0	5	0	4	0	0		
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Hourly Volume [veh/h]	0	30	50	39	0	110	80	25	20	265	80	134	290	110		
Peak Hour Factor	1.000	0.924	0.924	0.924	1.000	0.803	0.803	0.803	0.6628	0.6628	0.6628	0.9621	0.9621	0.9621		
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		
Total 15-Minute Volume [veh/h]	0	8	14	11	0	34	25	8	8	100	30	35	75	29		
Total Analysis Volume [veh/h]	0	32	54	42	0	137	100	31	30	400	121	139	301	114		
Presence of On-Street Parking	No			No	No			No	No			No	No	No		
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pedestrian Volume [ped/h]	307				0				6				14			
Bicycle Volume [bicycles/h]	1				8				9				31			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	8	0	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups														
Lead / Lag	-	Lag	-	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	7	7	7	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	30	30	30	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	45	45	45	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	14	14	14	14	14	14
Rest in Walk														
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall			No				No		Yes			Yes		
Maximum Recall			No				No		No			No		
Pedestrian Recall			No				No		No			No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.32	0.03	0.29	0.16	0.11	0.12
s, saturation flow rate [veh/h]	1279	1752	832	987	1817	895	1900	1678
c, Capacity [veh/h]	73	272	175	443	859	280	898	793
d1, Uniform Delay [s]	50.02	37.77	47.28	20.07	19.51	34.83	15.70	15.79
k, delay calibration	0.04	0.04	0.44	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.54	0.29	262.29	0.29	3.18	6.14	0.63	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

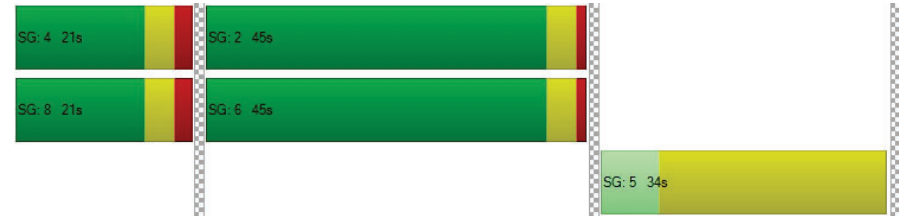
X, volume / capacity	0.44	0.35	1.53	0.07	0.61	0.50	0.24	0.25
d, Delay for Lane Group [s/veh]	51.55	38.06	309.57	20.36	22.69	40.97	16.33	16.55
Lane Group LOS	D	D	F	C	C	D	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.82	2.09	17.08	0.48	9.34	3.51	3.02	2.83
50th-Percentile Queue Length [ft/ln]	20.52	52.29	426.96	12.06	233.51	87.67	75.42	70.63
95th-Percentile Queue Length [veh/ln]	1.48	3.76	27.84	0.87	14.35	6.31	5.43	5.09
95th-Percentile Queue Length [ft/ln]	36.93	94.12	696.03	21.72	358.81	157.81	135.76	127.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.55	51.55	38.06	38.06	309.5	309.5	309.5	309.5	20.36	22.69	22.69	40.97	16.40	16.55
Movement LOS	D	D	D	D	F	F	F	F	C	C	C	D	B	B
d_A, Approach Delay [s/veh]	41.44				309.57				22.56			22.59		
Approach LOS	D				F				C			C		
d_I, Intersection Delay [s/veh]	75.43													
Intersection LOS	E													
Intersection V/C	0.609													

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 27.2
Level Of Service: C
Volume to Capacity (v/c): 0.306

Intersection Setup

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Arizona Ave				ARIZONA AVENUE			
	Base Volume Input [veh/h]	0	40	160	40	0	20	50	50	0	40	80	90	0	30	80
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	21	0	-3	0	0	0	5	0	0	0	0	0	-1	30	-2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	61	160	37	0	20	50	55	0	40	80	90	0	29	110	58
Peak Hour Factor	1.000	0.828	0.828	0.828	1.000	0.834	0.834	0.834	1.000	0.885	0.885	0.885	1.000	0.872	0.872	0.872
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	18	48	11	0	6	15	16	0	11	23	25	0	8	32	17
Total Analysis Volume [veh/h]	0	74	193	45	0	24	60	66	0	45	90	102	0	33	126	66
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	257				0				18				7			
Bicycle Volume [bicycles/h]	11				5				23				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	8	8	0	0	0	4	4	0	2	2	2	0	0	6	0	
Auxiliary Signal Groups																	
Lead / Lag	-	Lag	-	-	-	-	-	-	-	Lag	-	-	-	-	-	-	
Minimum Green [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0	
Maximum Green [s]	0	30	30	0	0	0	30	30	0	30	30	30	0	0	30	0	
Amber [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	3.6	0.0	
All red [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	1.0	1.0	1.0	0.0	0.0	1.0	0.0	
Split [s]	0	35	35	0	0	0	35	35	0	38	38	38	0	0	38	0	
Vehicle Extension [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	
Walk [s]	0	7	7	0	0	0	7	7	0	7	7	7	0	0	7	0	
Pedestrian Clearance [s]	0	13	13	0	0	0	13	13	0	16	16	16	0	0	16	0	
Rest in Walk																	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	
I2, Clearance Lost Time [s]	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	0.0	2.6	2.6	2.6	0.0	0.0	2.6	0.0	
Minimum Recall			Yes				Yes			No					No		
Maximum Recall										No					No		
Pedestrian Recall			No				No			No			No		No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	17	17	17	17	17	53	53
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.06	0.10	0.03	0.02	0.07	0.15	0.20
s, saturation flow rate [veh/h]	1285	1900	1544	1209	1708	1601	1100
c, Capacity [veh/h]	172	323	262	132	290	888	622
d1, Uniform Delay [s]	45.14	38.36	35.50	46.08	37.21	12.90	14.00
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	0.66	0.11	0.24	0.38	0.74	1.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

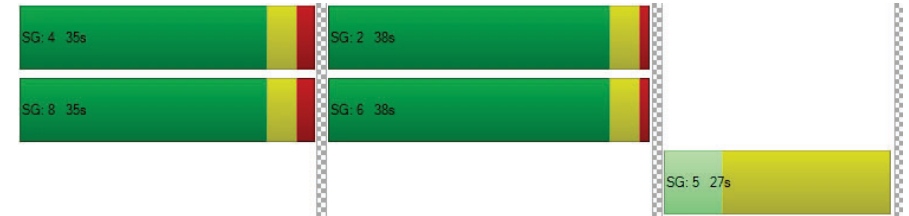
X, volume / capacity	0.43	0.60	0.17	0.18	0.43	0.27	0.36
d, Delay for Lane Group [s/veh]	45.77	39.02	35.61	46.33	37.59	13.63	15.63
Lane Group LOS	D	D	D	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.80	4.34	0.93	0.58	2.74	2.93	3.18
50th-Percentile Queue Length [ft/ln]	44.91	108.53	23.30	14.47	68.55	73.26	79.46
95th-Percentile Queue Length [veh/ln]	3.23	7.76	1.68	1.04	4.94	5.27	5.72
95th-Percentile Queue Length [ft/ln]	80.84	193.96	41.95	26.04	123.40	131.87	143.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.77	45.77	39.02	35.61	46.33	46.33	37.59	37.59	13.63	13.63	13.63	13.63	15.63	15.63	15.63	15.63
Movement LOS	D	D	D	D	D	D	D	D	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	40.13				38.99				13.63				15.63			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	27.18															
Intersection LOS	C															
Intersection V/C	0.306															

Sequence

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



Intersection Level Of Service Report

Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 31.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.482

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	30	140	20	20	110	40	40	200	30	70	140	120
Base Volume Input [veh/h]	30	140	20	20	110	40	40	200	30	70	140	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	8	-3	38	29	35	-1	-10	-3	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	148	17	58	139	75	39	190	27	70	142	126
Peak Hour Factor	0.8868	0.8868	0.8868	0.7663	0.7663	0.7663	0.9649	0.9649	0.9649	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	42	5	19	45	24	10	49	7	19	39	35
Total Analysis Volume [veh/h]	33	167	19	76	181	98	40	197	28	77	156	138
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	425			0			24			8		
Bicycle Volume [bicycles/h]	3			6			42			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	83.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.03	0.09	0.02	0.06	0.16	0.26	0.02	0.32	0.09
s, saturation flow rate [veh/h]	1118	1900	900	1238	1767	910	1566	718	1584
c, Capacity [veh/h]	101	370	175	194	344	500	787	409	797
d1, Uniform Delay [s]	48.87	35.55	33.12	43.29	38.50	17.71	12.58	25.76	13.53
k, delay calibration	0.04	0.04	0.04	0.04	0.09	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.70	0.32	0.10	0.48	3.80	3.20	0.08	5.65	0.47
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

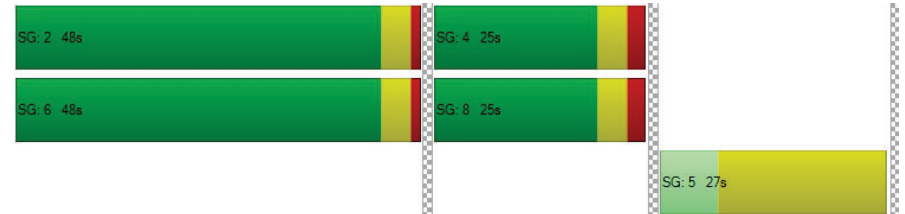
X, volume / capacity	0.33	0.45	0.11	0.39	0.81	0.47	0.04	0.57	0.17
d, Delay for Lane Group [s/veh]	49.56	35.87	33.22	43.77	42.30	20.91	12.66	31.41	14.01
Lane Group LOS	D	D	C	D	D	C	B	C	B
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.83	3.56	0.38	1.80	6.75	3.40	0.33	5.71	1.75
50th-Percentile Queue Length [ft/ln]	20.83	89.01	9.47	45.05	168.63	84.95	8.23	142.80	43.83
95th-Percentile Queue Length [veh/ln]	1.50	6.41	0.68	3.24	11.00	6.12	0.59	9.63	3.16
95th-Percentile Queue Length [ft/ln]	37.50	160.21	17.05	81.09	275.12	152.91	14.82	240.78	78.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.56	35.87	33.22	43.77	42.30	42.30	20.91	20.91	12.66	31.41	31.41	14.01
Movement LOS	D	D	C	D	D	D	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	37.70			42.62			20.04			24.94		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	31.36											
Intersection LOS	C											
Intersection V/C	0.482											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.5
Level Of Service: C
Volume to Capacity (v/c): 0.349

Intersection Setup

Name	2nd St				2nd St				Broadway				Br			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	35.00				35.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Broadway				Br			
	0	0	300	180	0	60	190	10	0	100	140	80	0	120	240	70
Base Volume Input [veh/h]	0	0	300	180	0	60	190	10	0	100	140	80	0	120	240	70
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	0	0	4	21	0	0	-1	0	0	0	0	0	-6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	307	180	0	64	211	10	0	99	140	80	0	120	240	64
Peak Hour Factor	1.000	0.863	0.863	0.863	1.000	0.856	0.856	0.856	1.000	0.889	0.889	0.889	1.000	0.776	0.776	0.776
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	0	89	52	0	19	62	3	0	28	39	22	0	39	77	21
Total Analysis Volume [veh/h]	0	0	355	208	0	75	246	12	0	111	157	90	0	155	309	82
Presence of On-Street Parking	No		No	No	No	No		No	No	No		No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	466				0				17				14			
Bicycle Volume [bicycles/h]	14				37				53				22			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	80.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi
Signal Group	0	2	8	2	0	6	4	6	0	4	2	4	0	8	6	8
Auxiliary Signal Groups	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Lead / Lag	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	0	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	1.0	2.0	1.0	0.0	1.0	2.0	1.0	0.0	2.0	1.0	2.0	0.0	2.0	1.0	2.0
Split [s]	0	41	30	41	0	41	30	41	0	30	41	30	0	30	41	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	10	12	10	0	10	10	10	0	10	10	10	0	12	10	12
Rest in Walk																
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	2.6	3.6	2.6	0.0	2.6	3.6	2.6	0.0	3.6	2.6	3.6	0.0	3.6	2.6	3.6
Minimum Recall			No			No				Yes				Yes		
Maximum Recall			No			No				No				No		
Pedestrian Recall			No			No				No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.00	0.19	0.13	0.07	0.14	0.10	0.14	0.13	0.16	0.05
s, saturation flow rate [veh/h]	1139	1900	1548	1043	1880	1087	1756	1151	1900	1552
c, Capacity [veh/h]	193	464	379	127	459	397	760	436	823	672
d1, Uniform Delay [s]	0.00	35.10	32.97	48.08	33.08	27.40	18.71	27.02	19.20	16.97
k, delay calibration	0.04	0.09	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	2.26	0.46	1.64	0.40	1.75	1.13	2.26	1.31	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

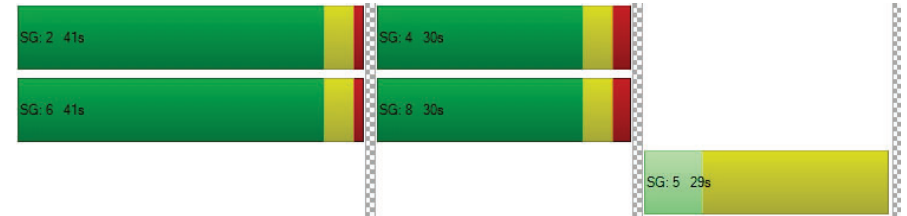
X, volume / capacity	0.00	0.76	0.55	0.59	0.56	0.28	0.32	0.36	0.38	0.12
d, Delay for Lane Group [s/veh]	0.00	37.35	33.43	49.72	33.48	29.15	19.84	29.28	20.51	17.34
Lane Group LOS	A	D	C	D	C	C	B	C	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.00	8.10	4.35	1.91	5.40	2.22	3.87	3.12	4.96	1.16
50th-Percentile Queue Length [ft/ln]	0.00	202.45	108.64	47.69	134.97	55.39	96.71	77.91	123.96	29.06
95th-Percentile Queue Length [veh/ln]	0.00	12.76	7.76	3.43	9.21	3.99	6.96	5.61	8.61	2.09
95th-Percentile Queue Length [ft/ln]	0.00	319.12	194.11	85.84	230.24	99.71	174.08	140.23	215.25	52.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	37.35	33.43	49.72	49.72	33.48	33.48	29.15	29.15	19.84	19.84	29.28	29.28	20.51	17.34
Movement LOS	A	A	D	C	D	D	C	C	C	C	B	B	C	C	C	B
d_A, Approach Delay [s/veh]	35.91			37.14			22.73			22.52						
Approach LOS	D			D			C			C						
d_I, Intersection Delay [s/veh]	29.45															
Intersection LOS	C															
Intersection V/C	0.349															

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 38.7
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.378

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	10	370	0	29	190	30	66	90	0	50	210	170
Base Volume Input [veh/h]	10	370	0	29	190	30	66	90	0	50	210	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	21	0	0	0	0	0	9	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	374	0	29	211	30	66	90	0	50	219	173
Peak Hour Factor	0.8824	0.8824	1.0000	0.9439	0.9737	0.9737	0.8321	0.8321	1.0000	0.9017	0.9017	0.9017
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	106	0	8	54	8	20	27	0	14	61	48
Total Analysis Volume [veh/h]	11	424	0	31	217	31	79	108	0	55	243	192
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	295			0			8			32		
Bicycle Volume [bicycles/h]	6			27			58			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	29	29	29	29	62	62
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.12	0.02	0.14	0.15
s, saturation flow rate [veh/h]	1160	1863	1863	1555	1881	1474
c, Capacity [veh/h]	204	450	450	375	967	758
d1, Uniform Delay [s]	46.41	44.65	39.03	35.19	16.49	16.63
k, delay calibration	0.04	0.24	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.04	18.51	0.30	0.03	0.71	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.94	0.48	0.08	0.28	0.29
d, Delay for Lane Group [s/veh]	46.45	63.16	39.33	35.22	17.21	17.60
Lane Group LOS	D	E	D	D	B	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.29	14.59	5.48	0.70	4.43	3.72
50th-Percentile Queue Length [ft/ln]	7.35	364.85	136.92	17.60	110.84	93.02
95th-Percentile Queue Length [veh/ln]	0.53	20.86	9.31	1.27	7.89	6.70
95th-Percentile Queue Length [ft/ln]	13.23	521.47	232.87	31.69	197.18	167.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.45	63.16	0.00	0.00	39.33	35.22	0.00	0.00	0.00	17.21	17.25	17.60
Movement LOS	D	E			D	D				B	B	B
d_A, Approach Delay [s/veh]	62.74			38.82			0.00			17.39		
Approach LOS	E			D			A			B		
d_I, Intersection Delay [s/veh]	38.74											
Intersection LOS	D											
Intersection V/C	0.378											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 24.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.504

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	110	440	180	70	110	30	110	330	20	170	380	180
Base Volume Input [veh/h]	110	440	180	70	110	30	110	330	20	170	380	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	10	4	0	0	-1	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	110	444	180	80	114	30	110	329	20	170	391	180
Peak Hour Factor	0.9461	0.9461	0.9461	0.8385	0.8385	0.8385	0.9433	0.9433	0.9433	0.9598	0.9598	0.9598
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	117	48	24	34	9	29	87	5	44	102	47
Total Analysis Volume [veh/h]	116	469	190	95	136	36	117	349	21	177	407	188
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	41	41	41	50	50	50	30	17	17	30	20	20
g / C, Green / Cycle	0.46	0.46	0.46	0.56	0.56	0.56	0.34	0.19	0.19	0.34	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.09	0.25	0.12	0.09	0.07	0.02	0.11	0.10	0.10	0.13	0.16	0.18
s, saturation flow rate [veh/h]	1258	1900	1549	1063	1900	1570	1036	1900	1809	1311	1900	1554
c, Capacity [veh/h]	581	870	709	542	1064	879	408	368	350	473	422	345
d1, Uniform Delay [s]	17.99	17.58	15.10	10.93	9.40	8.93	22.66	32.50	32.62	22.30	32.67	33.31
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.22	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.77	2.39	0.93	0.71	0.25	0.09	0.14	0.40	0.46	0.98	0.98	1.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

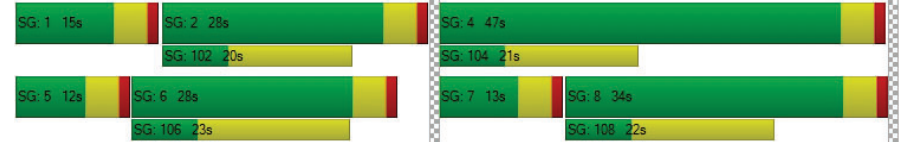
X, volume / capacity	0.20	0.54	0.27	0.18	0.13	0.04	0.29	0.51	0.52	0.37	0.74	0.82
d, Delay for Lane Group [s/veh]	18.77	19.98	16.02	11.63	9.65	9.02	22.80	32.90	33.08	23.28	33.65	35.17
Lane Group LOS	B	B	B	B	A	A	C	C	C	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.65	7.07	2.44	0.90	1.23	0.31	1.70	3.57	3.53	2.77	6.26	5.80
50th-Percentile Queue Length [ft/ln]	41.24	176.87	61.05	22.43	30.72	7.80	42.50	89.26	88.35	69.24	156.38	145.12
95th-Percentile Queue Length [veh/ln]	2.97	11.44	4.40	1.61	2.21	0.56	3.06	6.43	6.36	4.99	10.36	9.76
95th-Percentile Queue Length [ft/ln]	74.22	285.93	109.89	40.37	55.29	14.04	76.50	160.67	159.03	124.64	258.92	243.90

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.77	19.98	16.02	11.63	9.65	9.02	22.80	32.98	33.08	23.28	34.00	35.17
Movement LOS	B	B	B	B	A	A	C	C	C	C	C	D
d_A, Approach Delay [s/veh]	18.83			10.27			30.54			31.83		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	24.67											
Intersection LOS	C											
Intersection V/C	0.504											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	42.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	50	210	110	70	290	10	20	480	80	90	530	100
Base Volume Input [veh/h]	50	210	110	70	290	10	20	480	80	90	530	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	5	-1	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	210	110	70	290	10	20	485	79	90	534	100
Peak Hour Factor	0.7703	0.7703	0.7703	0.9300	0.9300	0.9300	0.9229	0.9229	0.9229	0.9545	0.9545	0.9545
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	68	36	19	78	3	5	131	21	24	140	26
Total Analysis Volume [veh/h]	65	273	143	75	312	11	22	526	86	94	559	105
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	363			0			4			8		
Bicycle Volume [bicycles/h]	9			5			7			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.06	0.14	0.09	0.07	0.16	0.01	0.03	0.33	0.09	0.18	0.18
s, saturation flow rate [veh/h]	1084	1900	1579	1124	1900	1586	784	1849	1028	1900	1779
c, Capacity [veh/h]	88	368	306	115	368	308	217	614	293	844	791
d1, Uniform Delay [s]	49.95	38.03	35.81	49.04	38.97	32.80	34.19	33.45	22.32	18.85	18.91
k, delay calibration	0.04	0.04	0.04	0.04	0.11	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.54	1.20	0.41	2.35	5.48	0.02	0.93	35.72	0.23	1.43	1.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

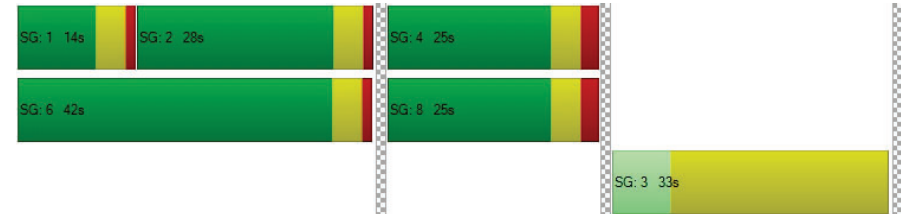
X, volume / capacity	0.74	0.74	0.47	0.65	0.85	0.04	0.10	1.00	0.32	0.40	0.41
d, Delay for Lane Group [s/veh]	54.49	39.24	36.23	51.39	44.45	32.81	35.12	69.17	22.56	20.29	20.47
Lane Group LOS	D	D	D	D	D	C	D	E	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.72	6.28	3.07	1.93	7.77	0.22	0.50	20.43	1.27	5.56	5.31
50th-Percentile Queue Length [ft/ln]	42.91	156.96	76.78	48.19	194.22	5.38	12.58	510.85	31.64	138.97	132.74
95th-Percentile Queue Length [veh/ln]	3.09	10.39	5.53	3.47	12.34	0.39	0.91	27.85	2.28	9.43	9.09
95th-Percentile Queue Length [ft/ln]	77.23	259.70	138.20	86.74	308.50	9.69	22.64	696.18	56.95	235.63	227.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.49	39.24	36.23	51.39	44.45	32.81	35.12	69.17	69.17	22.56	20.36	20.47
Movement LOS	D	D	D	D	D	C	D	E	E	C	C	C
d_A, Approach Delay [s/veh]	40.40			45.44			67.99			20.65		
Approach LOS	D			D			E			C		
d_I, Intersection Delay [s/veh]	42.39											
Intersection LOS	D											
Intersection V/C	0.529											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 29.0
Level Of Service: C
Volume to Capacity (v/c): 0.481

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	40	430	70	10	390	10	10	100	40	70	160	50
Base Volume Input [veh/h]	40	430	70	10	390	10	10	100	40	70	160	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	-3	2	0	-1	-2	0	20	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	430	70	10	387	12	10	99	38	70	180	50
Peak Hour Factor	0.8912	0.8912	0.8912	0.9148	0.9148	0.9148	0.8274	0.8274	0.8274	0.8393	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	121	20	3	106	3	3	30	11	21	54	15
Total Analysis Volume [veh/h]	52	483	79	11	423	13	12	120	46	83	214	60
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	276			0			17			7		
Bicycle Volume [bicycles/h]	20			10			12			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	34.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	40	40	40	40	0	0	30	0	30	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	43	43	43	43	43	43	24
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.43	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.25	0.05	0.01	0.12	0.12	0.10
s, saturation flow rate [veh/h]	968	1900	1555	927	1900	1876	1740
c, Capacity [veh/h]	400	825	676	275	825	815	461
d1, Uniform Delay [s]	23.13	21.44	16.85	30.86	18.07	18.08	31.79
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	3.03	0.35	0.27	0.78	0.80	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

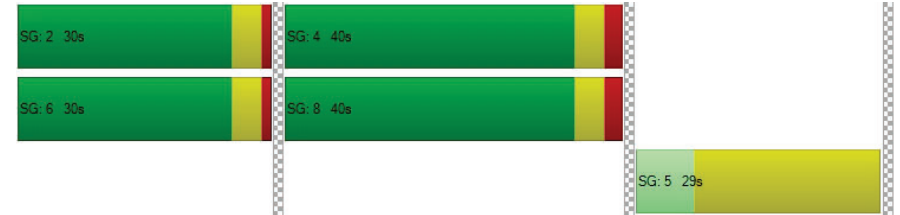
X, volume / capacity	0.13	0.59	0.12	0.04	0.27	0.27	0.39
d, Delay for Lane Group [s/veh]	23.80	24.47	17.20	31.13	18.86	18.88	31.98
Lane Group LOS	C	C	B	C	B	B	C
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.91	8.86	1.12	0.23	3.30	3.28	3.61
50th-Percentile Queue Length [ft/ln]	22.85	221.42	27.88	5.69	82.42	81.92	90.14
95th-Percentile Queue Length [veh/ln]	1.65	13.74	2.01	0.41	5.93	5.90	6.49
95th-Percentile Queue Length [ft/ln]	41.13	343.44	50.18	10.25	148.36	147.46	162.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.80	24.47	17.20	31.13	18.87	18.88	31.98	31.98	31.98	49.33	49.33	49.33
Movement LOS	C	C	B	C	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	23.48			19.17			31.98			49.33		
Approach LOS	C			B			C			D		
d_I, Intersection Delay [s/veh]	29.00											
Intersection LOS	C											
Intersection V/C	0.481											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 24.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.497

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	50	580	50	50	390	50	0	200	50	0	240	50
Base Volume Input [veh/h]	50	580	50	50	390	50	0	200	50	0	240	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	4	0	0	-4	-1	0	24	2	0	7	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	584	50	50	386	49	0	224	52	0	247	52
Peak Hour Factor	0.8402	0.8402	0.8402	0.9000	0.9000	0.9000	1.0000	0.8977	0.8977	1.0000	0.9470	0.9470
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	174	15	14	107	14	0	62	14	0	65	14
Total Analysis Volume [veh/h]	62	695	60	56	429	54	0	250	58	0	261	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	398			0			16			7		
Bicycle Volume [bicycles/h]	13			9			11			8		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	55	55	55	55	55	55	15	15	15	15
g / C, Green / Cycle	0.55	0.55	0.55	0.55	0.55	0.55	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.07	0.37	0.04	0.07	0.13	0.13	0.13	0.04	0.08	0.09
s, saturation flow rate [veh/h]	927	1900	1587	761	1900	1819	1900	1570	1900	1773
c, Capacity [veh/h]	490	1038	867	265	1038	994	287	237	287	268
d1, Uniform Delay [s]	16.12	16.24	10.70	30.03	11.83	11.85	41.46	37.39	39.27	39.53
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	3.44	0.15	1.80	0.54	0.57	3.18	0.20	0.61	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

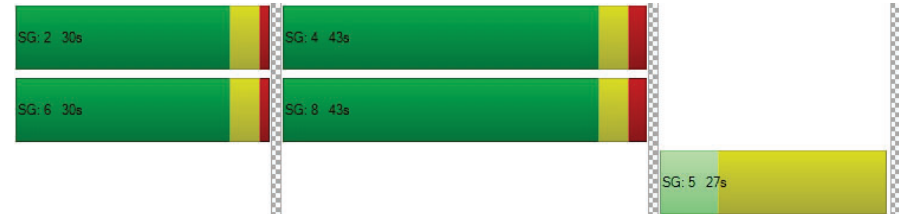
X, volume / capacity	0.13	0.67	0.07	0.21	0.24	0.24	0.87	0.24	0.55	0.59
d, Delay for Lane Group [s/veh]	16.65	19.68	10.86	31.83	12.36	12.41	44.65	37.59	39.89	40.30
Lane Group LOS	B	B	B	C	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.88	11.38	0.63	1.20	2.83	2.75	6.21	1.26	3.62	3.65
50th-Percentile Queue Length [ft/ln]	21.92	284.57	15.71	29.91	70.64	68.74	155.29	31.48	90.38	91.17
95th-Percentile Queue Length [veh/ln]	1.58	16.92	1.13	2.15	5.09	4.95	10.30	2.27	6.51	6.56
95th-Percentile Queue Length [ft/ln]	39.46	422.89	28.28	53.84	127.15	123.73	257.47	56.67	162.68	164.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.65	19.68	10.86	31.83	12.38	12.41	0.00	44.65	37.59	0.00	40.05	40.30
Movement LOS	B	B	B	C	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	18.80		14.41			43.32			40.09			
Approach LOS	B		B			D			D			
d_I, Intersection Delay [s/veh]	24.82											
Intersection LOS	C											
Intersection V/C	0.497											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 39.4
Level Of Service: D
Volume to Capacity (v/c): 0.541

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	100	620	210	30	350	40	0	240	40	30	290	70
Base Volume Input [veh/h]	100	620	210	30	350	40	0	240	40	30	290	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	6	0	0	-1	-1	0	0	4	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	98	626	210	30	349	39	0	240	44	30	287	70
Peak Hour Factor	0.9144	0.9144	0.9144	0.9709	0.9709	0.9709	1.0000	0.9118	0.9118	0.8866	0.8866	0.8866
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	171	57	8	90	10	0	66	12	8	81	20
Total Analysis Volume [veh/h]	107	685	230	31	359	40	0	263	48	34	324	79
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	516			0			19			11		
Bicycle Volume [bicycles/h]	29			44			5			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	9	51	51	60	46	46	19	32	28	28	28
g / C, Green / Cycle	0.07	0.42	0.42	0.50	0.39	0.39	0.15	0.27	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.06	0.36	0.15	0.03	0.11	0.11	0.14	0.03	0.03	0.17	0.05
s, saturation flow rate [veh/h]	1810	1900	1571	893	1900	1818	1900	1589	1313	1900	1591
c, Capacity [veh/h]	133	802	663	280	734	703	294	424	244	443	371
d1, Uniform Delay [s]	54.74	31.34	23.48	22.27	25.29	25.35	49.77	33.27	37.10	42.57	37.15
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.05	0.04	0.04	0.05	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.18	11.21	1.43	0.80	0.93	1.00	4.62	0.04	0.10	1.12	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.85	0.35	0.11	0.28	0.28	0.89	0.11	0.14	0.73	0.21
d, Delay for Lane Group [s/veh]	58.92	42.55	24.91	23.07	26.22	26.35	54.40	33.31	37.20	43.69	37.26
Lane Group LOS	E	D	C	C	C	C	D	C	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.31	19.78	4.61	0.49	4.11	4.03	8.10	1.07	0.79	8.92	1.88
50th-Percentile Queue Length [ft/ln]	82.84	494.51	115.29	12.27	102.64	100.64	202.54	26.81	19.63	222.90	46.97
95th-Percentile Queue Length [veh/ln]	5.96	27.07	8.13	0.88	7.39	7.25	12.77	1.93	1.41	13.81	3.38
95th-Percentile Queue Length [ft/ln]	149.11	676.86	203.34	22.09	184.74	181.14	319.24	48.27	35.33	345.32	84.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.92	42.55	24.91	23.07	26.27	26.35	0.00	54.40	33.31	37.20	43.69	37.26
Movement LOS	E	D	C	C	C	C		D	C	D	D	D
d_A, Approach Delay [s/veh]	40.29			26.05			51.14			42.02		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	39.39											
Intersection LOS	D											
Intersection V/C	0.541											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.408

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	310	980	0	0	430	30	181	0	84	120	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	4	0	0	3	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	322	984	0	0	433	30	181	0	84	120	130	40
Peak Hour Factor	0.8612	0.8612	1.0000	1.0000	0.9000	0.9000	0.8717	1.0000	0.8717	0.9130	0.9130	0.9130
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	93	286	0	0	120	8	52	0	24	33	36	11
Total Analysis Volume [veh/h]	374	1143	0	0	481	33	208	0	96	131	142	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	722			0			156			3		
Bicycle Volume [bicycles/h]	7			56			7			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	22	71	0	0	49	20	29	0	22	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	78	78	60	60	13	13
g / C, Green / Cycle	0.65	0.65	0.50	0.50	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.34	0.32	0.14	0.14	0.09	0.09
s, saturation flow rate [veh/h]	1090	3618	1900	1847	1828	1633
c, Capacity [veh/h]	717	2339	941	915	201	179
d1, Uniform Delay [s]	10.21	10.95	17.67	17.75	52.31	52.38
k, delay calibration	0.34	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.84	0.73	0.72	0.77	3.34	3.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

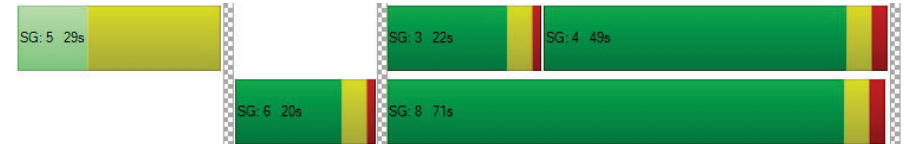
X, volume / capacity	0.52	0.49	0.27	0.28	0.83	0.84
d, Delay for Lane Group [s/veh]	12.04	11.68	18.39	18.52	55.65	56.34
Lane Group LOS	B	B	B	B	E	E
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.56	7.66	4.25	4.28	5.14	4.68
50th-Percentile Queue Length [ft/ln]	113.90	191.59	106.37	107.01	128.39	116.94
95th-Percentile Queue Length [veh/ln]	8.06	12.20	7.64	7.67	8.85	8.22
95th-Percentile Queue Length [ft/ln]	201.41	305.09	190.94	191.84	221.30	205.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.04	11.68	0.00	0.00	18.45	18.52	0.00	0.00	0.00	55.65	56.17	56.34
Movement LOS	B	B			B	B				E	E	E
d_A, Approach Delay [s/veh]	11.77		18.45		0.00		55.98					
Approach LOS	B		B		A		E					
d_I, Intersection Delay [s/veh]	19.20											
Intersection LOS	B											
Intersection V/C	0.408											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 38.7
Level Of Service: D
Volume to Capacity (v/c): 0.733

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		890	530
Base Volume Input [veh/h]	500	0	0	650	890	530
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	0	3	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	499	0	0	653	890	546
Peak Hour Factor	0.9052	1.0000	1.0000	0.8323	0.9608	0.9608
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	138	0	0	196	232	142
Total Analysis Volume [veh/h]	551	0	0	785	926	568
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	42.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	45	0	0	45	45	45
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	40	40	40	40
g / C, Green / Cycle	0.45	0.45	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.37	0.52
s, saturation flow rate [veh/h]	3618	3618	2500	1100
c, Capacity [veh/h]	1628	1628	1119	493
d1, Uniform Delay [s]	16.04	17.37	21.77	24.82
k, delay calibration	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.56	1.03	0.61	90.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

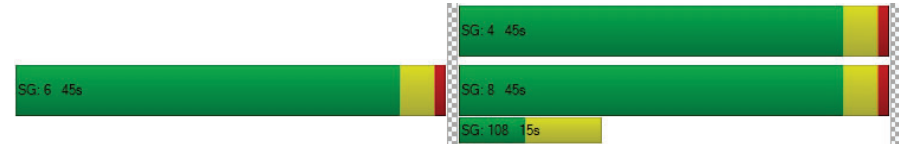
X, volume / capacity	0.34	0.48	0.83	1.15
d, Delay for Lane Group [s/veh]	16.61	18.39	22.38	114.85
Lane Group LOS	B	B	C	F
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	3.66	5.68	7.27	21.02
50th-Percentile Queue Length [ft/ln]	91.53	142.04	181.85	525.58
95th-Percentile Queue Length [veh/ln]	6.59	9.59	11.70	31.42
95th-Percentile Queue Length [ft/ln]	164.75	239.77	292.43	785.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.61	0.00	0.00	18.39	22.38	114.85
Movement LOS	B			B	C	F
d_A, Approach Delay [s/veh]	16.61			18.39		57.54
Approach LOS	B			B		E
d_I, Intersection Delay [s/veh]				38.71		
Intersection LOS				D		
Intersection V/C				0.733		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 56.5
 Level Of Service: E
 Volume to Capacity (v/c): 0.607

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	TTT			TTT			TTT					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	40	460	500	360	770	230	40	440	30	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-1	0	3	0	0	0	9	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	459	500	363	770	230	40	449	30	0	0	0
Peak Hour Factor	0.8933	0.8933	0.8933	0.9143	0.9143	0.9143	0.7752	0.7752	0.7752	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	128	140	99	211	63	13	145	10	0	0	0
Total Analysis Volume [veh/h]	45	514	560	397	842	252	52	579	39	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			109			47		
Bicycle Volume [bicycles/h]	0			2			13			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	5.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	12	36	36	25	49	49	29	29	29	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall	No	No		No	Yes			No				
Maximum Recall	No	Yes		No	No			No				
Pedestrian Recall	No	No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	25	25	37	59	59	14	14	14
g / C, Green / Cycle	0.04	0.28	0.28	0.42	0.66	0.66	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.02	0.27	0.37	0.11	0.30	0.32	0.13	0.13	0.13
s, saturation flow rate [veh/h]	1810	1900	1533	3514	1900	1656	1879	1729	1664
c, Capacity [veh/h]	69	528	426	1460	1244	1084	288	265	255
d1, Uniform Delay [s]	42.67	32.17	32.50	17.33	7.62	7.89	36.93	36.91	36.99
k, delay calibration	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.74	33.21	157.58	0.04	1.19	1.58	2.31	2.46	2.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.97	1.31	0.27	0.45	0.49	0.83	0.82	0.84
d, Delay for Lane Group [s/veh]	46.41	65.38	190.07	17.37	8.81	9.47	39.23	39.37	39.78
Lane Group LOS	D	E	F	B	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.05	15.56	27.59	2.63	4.99	4.95	5.11	4.69	4.62
50th-Percentile Queue Length [ft/ln]	26.22	388.95	689.69	65.77	124.81	123.86	127.73	117.37	115.52
95th-Percentile Queue Length [veh/ln]	1.89	22.03	41.91	4.74	8.66	8.60	8.82	8.25	8.15
95th-Percentile Queue Length [ft/ln]	47.20	550.67	1047.73	118.39	216.41	215.12	220.40	206.21	203.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.41	65.38	190.07	17.37	9.03	9.47	39.23	39.45	39.78	0.00	0.00	0.00
Movement LOS	D	E	F	B	A	A	D	D	D			
d_A, Approach Delay [s/veh]	127.02			11.33			39.45			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	56.54											
Intersection LOS	E											
Intersection V/C	0.607											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 15.5
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.287

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	120	120	60	40	90	20	10	515	20	110	600	40
Base Volume Input [veh/h]	120	120	60	40	90	20	10	515	20	110	600	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	0	0	0	0	5	0	1	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	120	65	40	90	20	10	520	20	111	605	40
Peak Hour Factor	0.9659	0.9659	0.9659	0.8023	0.8023	0.8023	0.9311	0.9311	0.9311	0.9371	0.9371	0.9371
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	31	17	12	28	6	3	140	5	30	161	11
Total Analysis Volume [veh/h]	124	124	67	50	112	25	11	558	21	118	646	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			88			39			23		
Bicycle Volume [bicycles/h]	7			9			2			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	22	64	64	64	64	64	64
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.22	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.10	0.07	0.04	0.04	0.08	0.01	0.15	0.01	0.14	0.18	0.19
s, saturation flow rate [veh/h]	1228	1900	1536	1260	1812	758	3618	1538	857	1900	1832
c, Capacity [veh/h]	241	425	344	257	405	485	2330	991	553	1224	1180
d1, Uniform Delay [s]	41.36	32.21	31.48	37.89	32.57	10.51	7.48	6.42	11.18	7.75	7.77
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	0.14	0.10	0.14	0.18	0.09	0.24	0.04	0.88	0.58	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

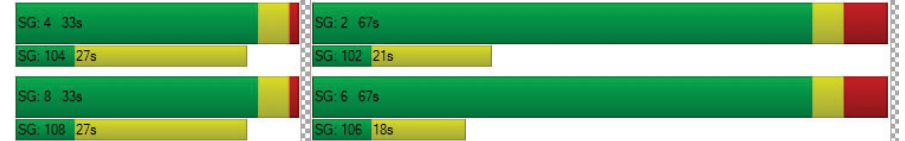
X, volume / capacity	0.52	0.29	0.19	0.19	0.34	0.02	0.24	0.02	0.21	0.28	0.29
d, Delay for Lane Group [s/veh]	41.99	32.35	31.58	38.02	32.75	10.60	7.73	6.46	12.06	8.33	8.39
Lane Group LOS	D	C	C	D	C	B	A	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.92	2.46	1.30	1.08	2.75	0.12	2.39	0.16	1.41	3.18	3.13
50th-Percentile Queue Length [ft/ln]	72.94	61.59	32.55	27.04	68.86	3.01	59.65	3.99	35.22	79.50	78.27
95th-Percentile Queue Length [veh/ln]	5.25	4.43	2.34	1.95	4.96	0.22	4.29	0.29	2.54	5.72	5.64
95th-Percentile Queue Length [ft/ln]	131.30	110.86	58.59	48.67	123.95	5.42	107.36	7.19	63.40	143.10	140.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.99	32.35	31.58	38.02	32.75	32.75	10.60	7.73	6.46	12.06	8.36	8.39
Movement LOS	D	C	C	D	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	35.98			34.16			7.73			8.90		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	15.52											
Intersection LOS	B											
Intersection V/C	0.287											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 18.9
 Level Of Service: B
 Volume to Capacity (v/c): 0.231

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	60	240	60	30	120	30	20	130	40	20	120	30
Base Volume Input [veh/h]	60	240	60	30	120	30	20	130	40	20	120	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	5	0	0	0	1	0	-1	0	0	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	245	60	30	120	31	20	129	40	20	134	30
Peak Hour Factor	0.8947	0.8947	0.8947	0.8571	0.8571	0.8571	0.8100	0.8100	0.8100	0.8464	0.8464	0.8464
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	68	17	9	35	9	6	40	12	6	40	9
Total Analysis Volume [veh/h]	72	274	67	35	140	36	25	159	49	24	158	35
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	30			86			30			19		
Bicycle Volume [bicycles/h]	27			10			3			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	14	16	14
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	70	70	70	70	70	20	20
g / C, Green / Cycle	0.71	0.71	0.71	0.71	0.71	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.10	0.03	0.10	0.13	0.13
s, saturation flow rate [veh/h]	1215	1900	1736	1050	1814	1734	1720
c, Capacity [veh/h]	855	1341	1225	750	1280	390	387
d1, Uniform Delay [s]	6.69	4.75	4.78	6.50	4.78	36.51	36.16
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	0.20	0.23	0.12	0.22	1.47	1.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

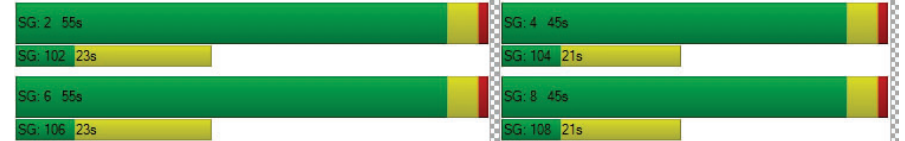
X, volume / capacity	0.08	0.13	0.14	0.05	0.14	0.60	0.56
d, Delay for Lane Group [s/veh]	6.89	4.96	5.01	6.62	5.01	37.97	37.43
Lane Group LOS	A	A	A	A	A	D	D
Critical Lane Group	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.56	1.05	1.01	0.27	1.06	5.26	4.84
50th-Percentile Queue Length [ft/ln]	14.06	26.14	25.24	6.71	26.62	131.49	121.00
95th-Percentile Queue Length [veh/ln]	1.01	1.88	1.82	0.48	1.92	9.02	8.45
95th-Percentile Queue Length [ft/ln]	25.31	47.05	45.43	12.08	47.91	225.51	211.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.89	4.97	5.01	6.62	5.01	5.01	37.97	37.97	37.97	37.43	37.43	37.43
Movement LOS	A	A	A	A	A	A	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	5.31			5.27			37.97			37.43		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	18.88											
Intersection LOS	B											
Intersection V/C	0.231											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.274

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	60	380	70	20	80	20	40	230	10	0	240	110
Base Volume Input [veh/h]	60	380	70	20	80	20	40	230	10	0	240	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	5	19	0	0	8	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	383	70	20	80	20	45	249	10	0	248	112
Peak Hour Factor	0.9555	0.9555	0.9555	0.8468	0.8468	0.8468	0.9094	0.9094	0.9094	0.9331	0.9331	0.9331
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	100	18	6	24	6	12	68	3	0	66	30
Total Analysis Volume [veh/h]	63	401	73	24	94	24	49	274	11	0	266	120
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	152			133			81			50		
Bicycle Volume [bicycles/h]	10			10			4			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	19	19	19	19	19	67	67	67	67	67	67
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.67	0.67	0.67	0.67	0.67	0.67
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.03	0.07	0.04	0.08	0.08	0.00	0.14	0.08
s, saturation flow rate [veh/h]	1191	1900	1734	912	1765	1104	1900	1860	1112	1900	1499
c, Capacity [veh/h]	205	366	334	113	340	740	1283	1256	773	1283	1012
d1, Uniform Delay [s]	41.65	37.33	37.61	46.87	34.91	8.16	5.70	5.71	0.00	6.13	5.73
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.77	0.97	0.35	0.23	0.17	0.18	0.18	0.00	0.37	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.66	0.69	0.21	0.35	0.07	0.11	0.11	0.00	0.21	0.12
d, Delay for Lane Group [s/veh]	41.96	38.10	38.58	47.22	35.14	8.33	5.88	5.89	0.00	6.50	5.97
Lane Group LOS	D	D	D	D	D	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.45	5.43	5.26	0.59	2.46	0.45	1.01	1.01	0.00	2.03	0.87
50th-Percentile Queue Length [ft/ln]	36.28	135.83	131.38	14.70	61.54	11.26	25.35	25.22	0.00	50.81	21.73
95th-Percentile Queue Length [veh/ln]	2.61	9.26	9.01	1.06	4.43	0.81	1.83	1.82	0.00	3.66	1.56
95th-Percentile Queue Length [ft/ln]	65.30	231.40	225.37	26.46	110.77	20.27	45.63	45.39	0.00	91.46	39.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.96	38.29	38.58	47.22	35.14	35.14	8.33	5.88	5.89	0.00	6.50	5.97
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	38.76			37.18			6.24			6.33		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	21.89											
Intersection LOS	C											
Intersection V/C	0.274											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.4
Level Of Service: C
Volume to Capacity (v/c): 0.349

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	90	510	70	30	50	10	50	230	20	20	270	50
Base Volume Input [veh/h]	90	510	70	30	50	10	50	230	20	20	270	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	513	70	30	50	10	50	230	20	20	267	50
Peak Hour Factor	0.8505	0.8505	0.8505	0.8750	0.8750	0.8750	0.9438	0.9438	0.9438	0.8844	0.8844	0.8844
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	151	21	9	14	3	13	61	5	6	75	14
Total Analysis Volume [veh/h]	106	603	82	34	57	11	53	244	21	23	302	57
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	89			102			37			54		
Bicycle Volume [bicycles/h]	34			64			3			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	25	65	65	65	65	65
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.19	0.04	0.04	0.05	0.14	0.02	0.16	0.04
s, saturation flow rate [veh/h]	1313	1900	1767	769	1807	1077	1864	1114	1900	1519
c, Capacity [veh/h]	336	482	449	114	459	689	1219	719	1243	993
d1, Uniform Delay [s]	34.69	34.11	34.36	46.78	28.92	9.59	6.97	8.97	7.11	6.22
k, delay calibration	0.04	0.08	0.09	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	1.51	2.20	0.54	0.05	0.22	0.41	0.08	0.46	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.72	0.75	0.30	0.15	0.08	0.22	0.03	0.24	0.06
d, Delay for Lane Group [s/veh]	34.89	35.62	36.56	47.32	28.98	9.81	7.38	9.05	7.58	6.33
Lane Group LOS	C	D	D	D	C	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.22	7.75	7.58	0.84	1.25	0.53	2.14	0.22	2.49	0.41
50th-Percentile Queue Length [ft/ln]	55.49	193.82	189.40	21.04	31.32	13.22	53.51	5.41	62.18	10.36
95th-Percentile Queue Length [veh/ln]	4.00	12.32	12.09	1.51	2.25	0.95	3.85	0.39	4.48	0.75
95th-Percentile Queue Length [ft/ln]	99.88	307.98	302.25	37.87	56.37	23.79	96.33	9.74	111.93	18.64

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.89	36.01	36.56	47.32	28.98	28.98	9.81	7.38	7.38	9.05	7.58	6.33
Movement LOS	C	D	D	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	35.92			35.09			7.79			7.48		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	23.43											
Intersection LOS	C											
Intersection V/C	0.349											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.1
Level Of Service: C
Volume to Capacity (v/c): 0.372

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	590	50	30	10	40	0	0	0	6	230	30
Base Volume Input [veh/h]	14	590	50	30	10	40	0	0	0	6	230	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	593	50	30	10	40	0	0	0	6	230	30
Peak Hour Factor	0.9399	0.8905	0.8905	0.7826	0.7826	0.7826	1.0000	1.0000	1.0000	0.9301	0.8393	0.8393
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	166	14	10	3	13	0	0	0	2	69	9
Total Analysis Volume [veh/h]	15	666	56	38	13	51	0	0	0	6	274	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	178			3			54			110		
Bicycle Volume [bicycles/h]	23			4			4			13		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	40	40	5	49	40
g / C, Green / Cycle	0.40	0.40	0.05	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.18	0.04	0.02	0.04	0.17
s, saturation flow rate [veh/h]	3618	1336	1810	1602	1856
c, Capacity [veh/h]	1451	536	83	790	752
d1, Uniform Delay [s]	21.97	18.71	46.48	13.39	21.23
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.05	0.39	1.47	0.20	1.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

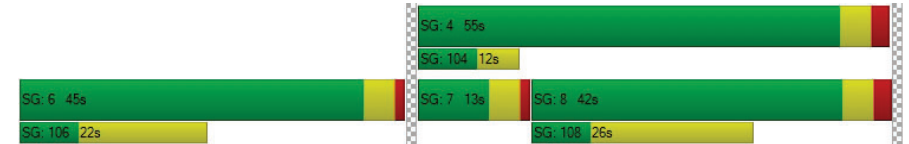
X, volume / capacity	0.46	0.10	0.46	0.08	0.41
d, Delay for Lane Group [s/veh]	23.02	19.11	47.95	13.59	22.89
Lane Group LOS	C	B	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.82	0.86	0.94	0.77	5.43
50th-Percentile Queue Length [ft/ln]	145.40	21.52	23.54	19.37	135.69
95th-Percentile Queue Length [veh/ln]	9.77	1.55	1.70	1.39	9.25
95th-Percentile Queue Length [ft/ln]	244.27	38.74	42.38	34.86	231.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	23.02	19.11	47.95	13.59	13.59	0.00	0.00	0.00	0.00	22.89	22.89
Movement LOS		C	B	D	B	B					C	C
d_A, Approach Delay [s/veh]		22.72		26.39			0.00				22.89	
Approach LOS		C		C			A				C	
d_I, Intersection Delay [s/veh]							23.10					
Intersection LOS							C					
Intersection V/C							0.372					

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 19.1
 Level Of Service: B
 Volume to Capacity (v/c): 0.259

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	30	80	30	10	120	10	40	140	30	20	150	30
Base Volume Input [veh/h]	30	80	30	10	120	10	40	140	30	20	150	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	0	0	-1	0	0	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	80	30	10	120	10	40	139	30	20	157	30
Peak Hour Factor	0.8225	0.8225	0.8225	0.8437	0.8437	0.8437	0.8830	0.8830	0.8830	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	24	9	3	36	3	11	39	8	6	43	8
Total Analysis Volume [veh/h]	45	97	36	12	142	12	45	157	34	22	174	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	16	16	74	74	74
g / C, Green / Cycle	0.17	0.17	0.74	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.12	0.09	0.14	0.11	0.02
s, saturation flow rate [veh/h]	1491	1806	1688	1809	1576
c, Capacity [veh/h]	290	336	1298	1385	1171
d1, Uniform Delay [s]	39.35	38.33	3.77	3.67	3.36
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	0.42	0.31	0.21	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.49	0.18	0.14	0.03
d, Delay for Lane Group [s/veh]	40.14	38.75	4.08	3.88	3.41
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.13	3.70	1.20	0.96	0.15
50th-Percentile Queue Length [ft/ln]	103.28	92.55	30.03	24.06	3.76
95th-Percentile Queue Length [veh/ln]	7.44	6.66	2.16	1.73	0.27
95th-Percentile Queue Length [ft/ln]	185.91	166.59	54.05	43.31	6.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.14	40.14	40.14	38.75	38.75	38.75	4.08	4.08	4.08	3.88	3.88	3.41
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.14			38.75			4.08			3.81		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	19.05											
Intersection LOS	B											
Intersection V/C	0.259											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 14.9
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.325

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	10	60	40	60	80	20	30	350	30	30	280	40
Base Volume Input [veh/h]	10	60	40	60	80	20	30	350	30	30	280	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	0	0	0	0	19	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	65	40	60	80	20	30	369	30	30	290	42
Peak Hour Factor	0.9629	0.9629	0.9629	0.8875	0.8875	0.8875	0.8500	0.8500	0.8500	0.9263	0.9263	0.9263
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	17	10	17	23	6	9	109	9	8	78	11
Total Analysis Volume [veh/h]	10	68	42	68	90	23	35	434	35	32	313	45
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	18	18	18	18	68	68	68	68	68	68
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.68	0.68	0.68	0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.01	0.07	0.06	0.07	0.04	0.25	0.03	0.04	0.18	0.03
s, saturation flow rate [veh/h]	1115	1554	1135	1612	962	1710	1378	867	1710	1355
c, Capacity [veh/h]	183	285	184	296	644	1171	943	557	1171	928
d1, Uniform Delay [s]	40.88	35.86	43.16	35.83	8.51	6.66	5.10	10.10	6.09	5.14
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.32	0.46	0.30	0.16	0.90	0.07	0.20	0.56	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.39	0.37	0.38	0.05	0.37	0.04	0.06	0.27	0.05
d, Delay for Lane Group [s/veh]	40.93	36.18	43.62	36.13	8.67	7.57	5.18	10.30	6.65	5.24
Lane Group LOS	D	D	D	D	A	A	A	B	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.22	2.34	1.61	2.40	0.33	3.72	0.23	0.34	2.44	0.30
50th-Percentile Queue Length [ft/ln]	5.58	58.49	40.18	60.01	8.32	92.98	5.77	8.55	60.97	7.49
95th-Percentile Queue Length [veh/ln]	0.40	4.21	2.89	4.32	0.60	6.69	0.42	0.62	4.39	0.54
95th-Percentile Queue Length [ft/ln]	10.04	105.29	72.33	108.03	14.98	167.36	10.38	15.39	109.74	13.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.93	36.18	36.18	43.62	36.13	36.13	8.67	7.57	5.18	10.30	6.65	5.24
Movement LOS	D	D	D	D	D	D	A	A	A	B	A	A
d_A, Approach Delay [s/veh]	36.57			38.95			7.48			6.79		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.94											
Intersection LOS	B											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 17.6
 Level Of Service: B
 Volume to Capacity (v/c): 0.289

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	20	150	30	20	100	20	70	150	50	30	190	20
Base Volume Input [veh/h]	20	150	30	20	100	20	70	150	50	30	190	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	0	0	0	0	0	-1	0	0	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	150	30	20	100	20	70	149	50	30	198	20
Peak Hour Factor	0.8965	0.8965	0.8965	0.7875	0.7875	0.7875	0.7827	0.7827	0.7827	0.8125	0.8125	0.8125
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	42	8	6	32	6	22	48	16	9	61	6
Total Analysis Volume [veh/h]	21	167	33	25	127	25	89	190	64	37	244	25
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	18	18	18	18	73	73	73
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.73	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.02	0.11	0.02	0.09	0.18	0.04	0.17
s, saturation flow rate [veh/h]	1188	1819	1182	1786	1557	1573	1773
c, Capacity [veh/h]	170	331	140	325	1178	1143	1328
d1, Uniform Delay [s]	42.83	37.59	45.36	36.57	4.40	3.91	4.48
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.12	0.67	0.22	0.39	0.47	0.09	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

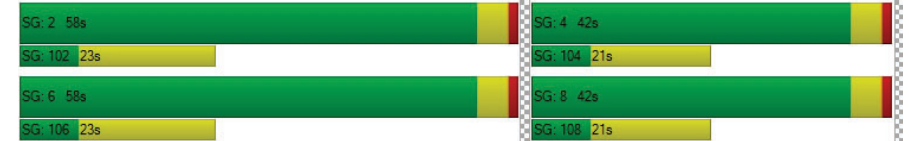
X, volume / capacity	0.12	0.60	0.18	0.47	0.24	0.06	0.23
d, Delay for Lane Group [s/veh]	42.95	38.26	45.58	36.96	4.87	4.00	4.89
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.49	4.57	0.61	3.37	1.63	0.33	1.79
50th-Percentile Queue Length [ft/ln]	12.34	114.24	15.23	84.22	40.63	8.24	44.87
95th-Percentile Queue Length [veh/ln]	0.89	8.08	1.10	6.06	2.93	0.59	3.23
95th-Percentile Queue Length [ft/ln]	22.21	201.89	27.42	151.59	73.13	14.83	80.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.95	38.26	38.26	45.58	36.96	36.96	4.87	4.87	4.00	4.89	4.89	4.89
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	38.70			38.18			4.71			4.89		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.60											
Intersection LOS	B											
Intersection V/C	0.289											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.3
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.348

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	20	210	30	40	80	20	30	330	10	20	350	70
Base Volume Input [veh/h]	20	210	30	40	80	20	30	330	10	20	350	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	19	0	-2	12	-1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	210	30	40	80	20	30	349	10	18	362	69
Peak Hour Factor	0.9300	0.9300	0.9300	0.7908	0.7908	0.7908	0.9059	0.9059	0.9059	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	56	8	13	25	6	8	96	3	5	99	19
Total Analysis Volume [veh/h]	22	226	32	51	101	25	33	385	11	20	396	75
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	22	22	22	22	65	65	65	65	65	65
g / C, Green / Cycle	0.22	0.22	0.22	0.22	0.65	0.65	0.65	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.02	0.14	0.05	0.07	0.03	0.10	0.11	0.02	0.21	0.05
s, saturation flow rate [veh/h]	1261	1847	1126	1814	998	1900	1876	993	1900	1552
c, Capacity [veh/h]	243	403	148	396	612	1234	1219	659	1234	1009
d1, Uniform Delay [s]	37.98	35.50	45.56	32.82	10.89	6.85	6.85	8.53	7.75	6.44
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.63	0.52	0.17	0.17	0.28	0.28	0.09	0.69	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.64	0.35	0.32	0.05	0.16	0.16	0.03	0.32	0.07
d, Delay for Lane Group [s/veh]	38.04	36.13	46.08	32.99	11.05	7.13	7.14	8.62	8.43	6.59
Lane Group LOS	D	D	D	C	B	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.48	5.78	1.26	2.60	0.37	1.62	1.61	0.19	3.66	0.58
50th-Percentile Queue Length [ft/ln]	12.04	144.56	31.57	64.94	9.13	40.38	40.16	4.72	91.53	14.49
95th-Percentile Queue Length [veh/ln]	0.87	9.73	2.27	4.68	0.66	2.91	2.89	0.34	6.59	1.04
95th-Percentile Queue Length [ft/ln]	21.67	243.15	56.83	116.89	16.43	72.68	72.29	8.49	164.75	26.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.04	36.13	36.13	46.08	32.99	32.99	11.05	7.13	7.14	8.62	8.43	6.59
Movement LOS	D	D	D	D	C	C	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	36.28			36.76			7.43			8.16		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.33											
Intersection LOS	B											
Intersection V/C	0.348											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.458

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	150	320	230	70	350	50	10	650	140	190	640	20
Base Volume Input [veh/h]	150	320	230	70	350	50	10	650	140	190	640	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	9	0	3	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	320	230	70	350	50	10	659	140	193	646	20
Peak Hour Factor	0.9050	0.9050	0.9050	0.9194	0.9194	0.9194	0.8737	0.8737	0.8737	0.9366	0.9366	0.9366
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	88	64	19	95	14	3	189	40	52	172	5
Total Analysis Volume [veh/h]	166	354	254	76	381	54	11	754	160	206	690	21
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	39			27			19			22		
Bicycle Volume [bicycles/h]	6			9			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	43	43	43	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.43	0.43	0.43	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.19	0.16	0.07	0.12	0.12	0.01	0.21	0.10	0.22	0.19	0.01
s, saturation flow rate [veh/h]	1207	1900	1560	1034	1900	1795	760	3618	1551	917	3618	1542
c, Capacity [veh/h]	432	670	551	136	442	418	309	1574	675	511	2008	856
d1, Uniform Delay [s]	23.73	25.74	25.01	47.37	33.32	33.42	24.04	20.17	17.80	12.69	12.23	10.03
k, delay calibration	0.30	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.55	0.24	0.22	1.32	0.33	0.36	0.21	1.05	0.83	2.36	0.47	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.53	0.46	0.56	0.50	0.51	0.04	0.48	0.24	0.40	0.34	0.02
d, Delay for Lane Group [s/veh]	25.28	25.98	25.24	48.69	33.64	33.78	24.25	21.21	18.63	15.05	12.70	10.09
Lane Group LOS	C	C	C	D	C	C	C	C	B	B	B	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.94	6.61	4.61	1.93	4.59	4.46	0.20	6.34	2.44	2.49	4.08	0.21
50th-Percentile Queue Length [ft/ln]	73.54	165.13	115.23	48.13	114.83	111.41	5.00	158.41	61.07	62.19	101.97	5.24
95th-Percentile Queue Length [veh/ln]	5.30	10.82	8.13	3.47	8.11	7.92	0.36	10.46	4.40	4.48	7.34	0.38
95th-Percentile Queue Length [ft/ln]	132.38	270.50	203.26	86.63	202.70	197.97	8.99	261.61	109.93	111.94	183.55	9.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.28	25.98	25.24	48.69	33.70	33.78	24.25	21.21	18.63	15.05	12.70	10.09
Movement LOS	C	C	C	D	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	25.59			35.94			20.80			13.17		
Approach LOS	C			D			C			B		
d_I, Intersection Delay [s/veh]	22.22											
Intersection LOS	C											
Intersection V/C	0.458											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 34.6
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.757

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
	80	700	70	10	690	10	10	70	60	50	130	30
Base Volume Input [veh/h]	80	700	70	10	690	10	10	70	60	50	130	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	0	3	0	-1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	700	70	10	690	13	10	69	60	50	130	30
Peak Hour Factor	0.9138	0.9138	0.9138	0.9461	0.9461	0.9461	0.7357	0.7357	0.7357	0.9154	0.9154	0.9154
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	192	19	3	182	3	3	23	20	14	36	8
Total Analysis Volume [veh/h]	93	766	77	11	729	14	14	94	82	55	142	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164			102			111			62		
Bicycle Volume [bicycles/h]	4			3			0			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No				No
Maximum Recall	No	No		No	No			No				No
Pedestrian Recall	No	No		No	No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	57	57	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.57	0.57	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.11	0.23	0.23	0.01	0.20	0.20	0.13	0.06	0.53	0.02
s, saturation flow rate [veh/h]	882	1900	1808	743	1900	1876	804	1323	375	1411
c, Capacity [veh/h]	588	1086	1033	500	998	985	260	360	148	384
d1, Uniform Delay [s]	7.70	11.86	11.92	7.43	14.03	14.05	29.33	28.24	33.85	27.12
k, delay calibration	0.13	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	1.08	1.16	0.08	1.07	1.10	0.40	0.12	187.12	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.39	0.40	0.02	0.37	0.38	0.42	0.23	1.33	0.09
d, Delay for Lane Group [s/veh]	7.85	12.93	13.08	7.51	15.10	15.15	29.73	28.36	220.97	27.16
Lane Group LOS	A	B	B	A	B	B	C	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.74	5.33	5.20	0.09	5.09	5.07	1.98	1.51	11.36	0.58
50th-Percentile Queue Length [ft/ln]	18.40	133.16	130.05	2.29	127.18	126.70	49.61	37.63	283.92	14.52
95th-Percentile Queue Length [veh/ln]	1.32	9.11	8.94	0.16	8.79	8.76	3.57	2.71	19.30	1.05
95th-Percentile Queue Length [ft/ln]	33.12	227.79	223.56	4.12	219.65	219.00	89.30	67.73	482.42	26.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.85	13.00	13.08	7.51	15.12	15.15	29.73	29.73	28.36	220.97	220.97	27.16
Movement LOS	A	B	B	A	B	B	C	C	C	F	F	C
d_A, Approach Delay [s/veh]	12.49			15.01			29.14			193.16		
Approach LOS	B			B			C			F		
d_I, Intersection Delay [s/veh]	34.59											
Intersection LOS	C											
Intersection V/C	0.757											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 24.2
Level Of Service: C
Volume to Capacity (v/c): 0.486

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	110	720	200	70	640	10	40	280	70	90	330	90
Base Volume Input [veh/h]	110	720	200	70	640	10	40	280	70	90	330	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	5	0	0	0	0	0	11	8	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	725	200	70	640	10	40	291	78	90	341	90
Peak Hour Factor	0.9396	0.9396	0.9396	0.8850	0.8850	0.8850	0.9209	0.9209	0.9209	0.9532	0.9532	0.9532
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	193	53	20	181	3	11	79	21	24	89	24
Total Analysis Volume [veh/h]	115	772	213	79	723	11	43	316	85	94	358	94
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			54			48			29		
Bicycle Volume [bicycles/h]	10			3			1			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	56	45	45	56	45	45	24	24	24	35	35	35
g / C, Green / Cycle	0.56	0.45	0.45	0.56	0.45	0.45	0.24	0.24	0.24	0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.13	0.27	0.27	0.10	0.19	0.19	0.04	0.11	0.11	0.08	0.19	0.06
s, saturation flow rate [veh/h]	913	1900	1729	776	1900	1887	1019	1900	1709	1212	1900	1517
c, Capacity [veh/h]	522	856	779	421	848	843	137	450	405	430	662	529
d1, Uniform Delay [s]	11.40	20.65	20.80	12.69	19.00	19.01	45.80	32.66	32.88	22.96	26.16	22.64
k, delay calibration	0.24	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	3.06	3.52	0.99	1.61	1.63	0.48	0.27	0.33	0.09	0.26	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

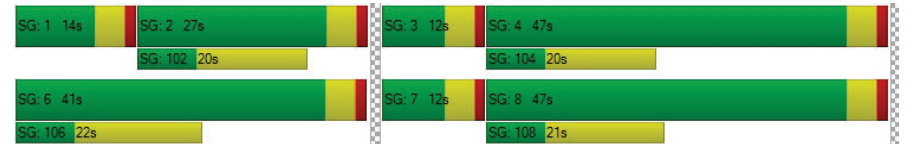
X, volume / capacity	0.22	0.60	0.61	0.19	0.43	0.43	0.31	0.46	0.48	0.22	0.54	0.18
d, Delay for Lane Group [s/veh]	11.86	23.71	24.32	13.68	20.62	20.64	46.29	32.93	33.21	23.05	26.42	22.70
Lane Group LOS	B	C	C	B	C	C	D	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.21	9.36	8.83	0.89	6.07	6.05	1.06	4.26	4.08	1.52	6.77	1.54
50th-Percentile Queue Length [ft/ln]	30.35	234.02	220.69	22.16	151.84	151.20	26.44	106.59	101.92	38.05	169.23	38.39
95th-Percentile Queue Length [veh/ln]	2.18	14.38	13.70	1.60	10.12	10.08	1.90	7.65	7.34	2.74	11.04	2.76
95th-Percentile Queue Length [ft/ln]	54.62	359.46	342.51	39.89	252.88	252.03	47.59	191.24	183.45	68.50	275.90	69.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.86	23.92	24.32	13.68	20.63	20.64	46.29	33.03	33.21	23.05	26.42	22.70
Movement LOS	B	C	C	B	C	C	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	22.74			19.96			34.35			25.20		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	24.20											
Intersection LOS	C											
Intersection V/C	0.486											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 38.4
Level Of Service: D
Volume to Capacity (v/c): 0.585

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	110	930	150	40	850	40	80	280	100	90	270	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	3	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	933	150	40	858	40	80	280	100	90	270	60
Peak Hour Factor	0.9760	0.9760	0.9760	0.9479	0.9479	0.9479	0.8510	0.8510	0.8510	0.8772	0.8772	0.8772
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	239	38	11	226	11	24	82	29	26	77	17
Total Analysis Volume [veh/h]	112	956	154	42	905	42	94	329	118	103	308	68
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	58			79			72			42		
Bicycle Volume [bicycles/h]	48			57			6			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	8	51	51	39	39	39	26	26	26	35	35
g / C, Green / Cycle	0.08	0.51	0.51	0.39	0.39	0.39	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.06	0.30	0.31	0.08	0.25	0.25	0.09	0.17	0.08	0.34	0.05
s, saturation flow rate [veh/h]	1810	1900	1752	516	1900	1850	1088	1900	1481	1223	1486
c, Capacity [veh/h]	141	978	902	151	743	724	72	488	380	405	524
d1, Uniform Delay [s]	45.32	16.77	17.03	38.95	24.75	24.84	50.00	33.39	30.00	30.00	21.93
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.14	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.82	2.51	2.96	4.50	4.23	4.47	142.58	2.13	0.17	48.84	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.58	0.60	0.28	0.64	0.65	1.30	0.67	0.31	1.02	0.13
d, Delay for Lane Group [s/veh]	49.15	19.28	19.99	43.44	28.99	29.32	192.58	35.52	30.17	78.84	21.97
Lane Group LOS	D	B	B	D	C	C	F	D	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.86	9.26	9.07	1.13	9.82	9.74	4.65	7.26	2.26	13.15	1.06
50th-Percentile Queue Length [ft/ln]	71.60	231.59	226.65	28.30	245.44	243.41	116.30	181.48	56.60	328.66	26.60
95th-Percentile Queue Length [veh/ln]	5.16	14.25	14.00	2.04	14.96	14.85	8.37	11.68	4.08	19.29	1.92
95th-Percentile Queue Length [ft/ln]	128.88	356.37	350.10	50.94	373.90	371.34	209.34	291.95	101.89	482.28	47.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.15	19.57	19.99	43.44	29.14	29.32	192.58	35.52	30.17	78.84	78.84	21.97
Movement LOS	D	B	B	D	C	C	F	D	C	E	E	C
d_A, Approach Delay [s/veh]	22.33			29.76			61.65			70.77		
Approach LOS	C			C			E			E		
d_I, Intersection Delay [s/veh]	38.37											
Intersection LOS	D											
Intersection V/C	0.585											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 67.4
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.580

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	80	1230	190	10	1100	10	6	90	100	66	90	30
Base Volume Input [veh/h]	80	1230	190	10	1100	10	6	90	100	66	90	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	2	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	1232	190	10	1108	10	6	90	100	66	90	30
Peak Hour Factor	0.9193	0.9193	0.9193	0.9119	0.9119	0.9119	0.8750	0.7635	0.7635	0.9427	0.8293	0.8293
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	335	52	3	304	3	2	29	33	18	27	9
Total Analysis Volume [veh/h]	92	1340	207	11	1215	11	7	118	131	70	109	36
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			32			25			16		
Bicycle Volume [bicycles/h]	13			12			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	2	7	4	6	5	2	3	1	6	8
Auxiliary Signal Groups									2.3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	0	7	7
Maximum Green [s]	15	30	40	15	30	40	0	40	15	0	40	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0
Split [s]	30	0	30	0	0	30	0	30	30	0	30	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	18	17	0	18	17	0	17	0	0	17	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	0.0	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	6	35	35	2	30	30	40	40
g / C, Green / Cycle	0.07	0.38	0.38	0.02	0.33	0.33	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.05	0.41	0.43	0.01	0.32	0.32	0.15	0.08
s, saturation flow rate [veh/h]	1810	1900	1783	1810	1900	1891	1708	1802
c, Capacity [veh/h]	128	729	684	36	632	629	758	799
d1, Uniform Delay [s]	41.02	27.80	27.80	43.57	29.66	29.69	16.34	15.18
k, delay calibration	0.04	0.50	0.50	0.04	0.40	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.82	55.33	71.25	1.75	25.82	26.30	1.16	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

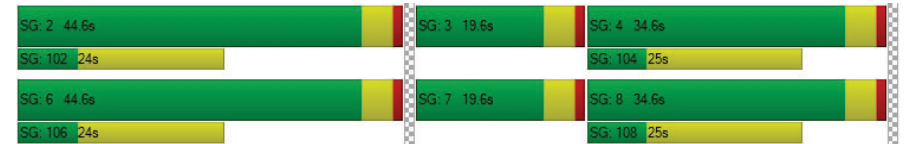
X, volume / capacity	0.72	1.07	1.12	0.31	0.97	0.97	0.33	0.18
d, Delay for Lane Group [s/veh]	43.85	83.13	99.05	45.32	55.49	55.99	17.50	15.68
Lane Group LOS	D	F	F	D	E	E	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.08	26.02	27.44	0.26	17.07	17.11	3.46	1.85
50th-Percentile Queue Length [ft/ln]	51.93	650.55	686.11	6.43	426.72	427.63	86.57	46.30
95th-Percentile Queue Length [veh/ln]	3.74	36.17	38.86	0.46	23.84	23.89	6.23	3.33
95th-Percentile Queue Length [ft/ln]	93.47	904.32	971.45	11.58	596.11	597.20	155.82	83.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.85	89.74	99.05	45.32	55.74	55.99	0.00	17.50	17.50	0.00	15.68	15.68
Movement LOS	D	F	F	D	E	E		B	B		B	B
d_A, Approach Delay [s/veh]	88.34		55.65		17.50		15.68					
Approach LOS	F		E		B		B					
d_I, Intersection Delay [s/veh]	67.36											
Intersection LOS	E											
Intersection V/C	0.580											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 99.7
 Level Of Service: F
 Volume to Capacity (v/c): 0.982

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	280	630	0	1180	40	0	0	0	0	750	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	637	0	1188	40	0	0	0	0	750	290	790
Peak Hour Factor	0.8698	0.8698	1.0000	1.0000	0.8931	0.8931	1.0000	1.0000	1.0000	0.9451	0.9451	0.9451
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	183	0	333	11	0	0	0	0	198	77	209
Total Analysis Volume [veh/h]	322	732	0	1330	45	0	0	0	0	794	307	836
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1			10			43		
Bicycle Volume [bicycles/h]	3			0			5			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	23	55	0	0	32	32	0	0	0	35	35	35
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	18	50	28	28	30	30	30	30
g / C, Green / Cycle	0.20	0.56	0.31	0.31	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.25	0.25	0.55	0.27	0.30	0.55
s, saturation flow rate [veh/h]	1810	3618	3618	1866	900	1845	1501	900
c, Capacity [veh/h]	355	2026	1130	583	304	623	507	304
d1, Uniform Delay [s]	35.35	10.92	28.49	28.20	29.80	26.99	28.20	29.80
k, delay calibration	0.28	0.50	0.50	0.50	0.50	0.25	0.33	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.99	0.50	6.35	10.26	298.5	5.42	14.61	296.8
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.36	0.81	0.79	1.63	0.80	0.89	1.63
d, Delay for Lane Group [s/veh]	54.34	11.42	34.84	38.46	328.3	32.41	42.81	326.6
Lane Group LOS	D	B	C	D	F	C	D	F
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	8.61	3.86	9.78	10.35	31.17	9.75	10.42	31.03
50th-Percentile Queue Length [ft/ln]	215.33	96.62	244.47	258.82	779.2	243.7	260.4	775.7
95th-Percentile Queue Length [veh/ln]	13.43	6.96	14.91	15.63	50.88	14.87	15.71	50.64
95th-Percentile Queue Length [ft/ln]	335.66	173.92	372.68	390.74	1271.	371.8	392.8	1266.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.34	11.42	0.00	0.00	35.96	38.46	0.00	0.00	0.00	212.84	36.11	213.64
Movement LOS	D	B			D	D				F	D	F
d_A, Approach Delay [s/veh]	24.53		36.05		0.00		185.71					
Approach LOS	C		D		A		F					
d_I, Intersection Delay [s/veh]	99.67											
Intersection LOS	F											
Intersection V/C	0.982											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 28.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.756

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	700	690	830	1020	0	180	380	260	0	0	0	0
Base Volume Input [veh/h]	0	700	690	830	1020	0	180	380	260	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	707	690	830	1028	0	180	380	260	0	0	0
Peak Hour Factor	1.0000	0.8776	0.8776	0.8633	0.8633	1.0000	0.7468	0.7468	0.7468	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	201	197	240	298	0	60	127	87	0	0	0
Total Analysis Volume [veh/h]	0	806	786	961	1191	0	241	509	348	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			15			37		
Bicycle Volume [bicycles/h]	0			5			8			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	20	30	0	37	37	37	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	30	30	23	53	0	37	37	37	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	27	27	27	27	59	22	22	22
g / C, Green / Cycle	0.30	0.30	0.30	0.30	0.65	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.22	0.26	0.26	0.27	0.33	0.21	0.21	0.22
s, saturation flow rate [veh/h]	3618	1514	1514	3514	3618	1843	1729	1584
c, Capacity [veh/h]	1070	448	448	1067	2354	455	427	392
d1, Uniform Delay [s]	28.63	30.29	30.29	30.05	8.19	32.31	32.31	32.71
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	2.45	2.45	12.02	0.78	1.75	1.85	2.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

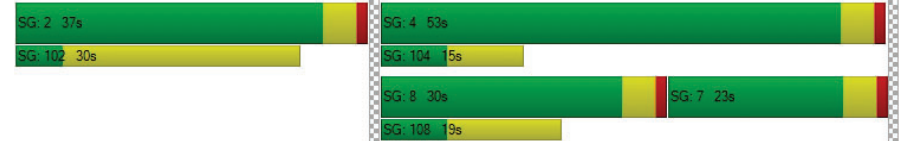
X, volume / capacity	0.74	0.89	0.89	0.90	0.51	0.85	0.85	0.89
d, Delay for Lane Group [s/veh]	29.02	32.74	32.74	42.07	8.97	34.06	34.17	35.51
Lane Group LOS	C	C	C	D	A	C	C	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.46	8.14	8.14	11.38	5.44	7.93	7.45	7.32
50th-Percentile Queue Length [ft/ln]	186.51	203.42	203.42	284.57	136.10	198.16	186.14	182.95
95th-Percentile Queue Length [veh/ln]	11.94	12.82	12.82	16.92	9.27	12.54	11.92	11.75
95th-Percentile Queue Length [ft/ln]	298.49	320.38	320.38	422.89	231.76	313.60	298.02	293.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	29.02	32.74	42.07	8.97	0.00	34.06	34.14	35.51	0.00	0.00	0.00
Movement LOS		C	C	D	A		C	C	D			
d_A, Approach Delay [s/veh]		30.88			23.75			34.55			0.00	
Approach LOS		C			C			C			A	
d_I, Intersection Delay [s/veh]		28.55										
Intersection LOS		C										
Intersection V/C		0.756										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 13.3
Level Of Service: B
Volume to Capacity (v/c): 0.415

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	750	160	80	610	90	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	25	-1	0	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	775	159	80	616	90	190
Peak Hour Factor	0.8732	0.8732	0.9247	0.9247	0.8357	0.8357
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	46	22	167	27	57
Total Analysis Volume [veh/h]	888	182	87	666	108	227
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	79		91		60	
Bicycle Volume [bicycles/h]	2		28		7	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
12, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.25	0.12	0.14	0.18	0.07	0.17
s, saturation flow rate [veh/h]	3618	1554	634	3618	1564	1337
c, Capacity [veh/h]	2509	1077	435	2509	273	233
d1, Uniform Delay [s]	6.22	5.32	10.64	5.75	36.60	41.04
k, delay calibration	0.50	0.50	0.50	0.50	0.04	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.34	1.03	0.26	0.35	14.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.17	0.20	0.27	0.40	0.97
d, Delay for Lane Group [s/veh]	6.61	5.66	11.67	6.01	36.95	55.88
Lane Group LOS	A	A	B	A	D	E
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.44	1.26	1.03	2.38	2.33	6.38
50th-Percentile Queue Length [ft/ln]	86.12	31.51	25.84	59.62	58.16	159.55
95th-Percentile Queue Length [veh/ln]	6.20	2.27	1.86	4.29	4.19	10.53
95th-Percentile Queue Length [ft/ln]	155.01	56.72	46.51	107.31	104.69	263.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.61	5.66	11.67	6.01	36.95	55.88
Movement LOS	A	A	B	A	D	E
d_A, Approach Delay [s/veh]	6.45		6.67		49.77	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]				13.25		
Intersection LOS				B		
Intersection V/C				0.415		

Sequence

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



Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 106.4
Level Of Service: F
Volume to Capacity (v/c): 0.777

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TT			TT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	10	300	430	100	180	20	40	420	10	150	40	40
Base Volume Input [veh/h]	10	300	430	100	180	20	40	420	10	150	40	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	8	14	0	0	2	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	304	430	108	194	20	40	422	10	150	40	40
Peak Hour Factor	0.9761	0.9761	0.9761	0.8833	0.8833	0.8833	0.7985	0.7985	0.7985	0.9583	0.9583	0.9583
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	78	110	31	55	6	13	132	3	39	10	10
Total Analysis Volume [veh/h]	10	311	441	122	220	23	50	528	13	157	42	42
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	38			99			69			77		
Bicycle Volume [bicycles/h]	1			1			56			15		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	44	0	10	44	0	0	26	0	0	26	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No				No			No
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	45	36	45	40	17	17	17	17
g / C, Green / Cycle	0.57	0.45	0.57	0.50	0.22	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.01	0.45	0.14	0.13	0.04	0.29	0.18	0.05
s, saturation flow rate [veh/h]	1208	1653	895	1849	1200	1885	878	1586
c, Capacity [veh/h]	729	747	316	918	271	411	90	345
d1, Uniform Delay [s]	7.79	21.95	17.02	11.70	30.15	31.34	40.06	25.88
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.16	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	34.46	3.53	0.70	0.12	148.56	338.33	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

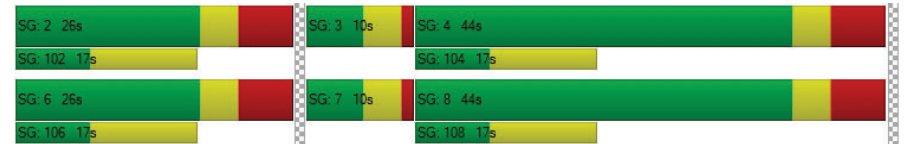
X, volume / capacity	0.01	1.01	0.39	0.26	0.18	1.32	1.74	0.24
d, Delay for Lane Group [s/veh]	7.79	56.41	20.55	12.41	30.28	179.90	378.39	26.02
Lane Group LOS	A	F	C	B	C	F	F	C
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	19.54	1.19	2.50	0.84	24.56	10.18	1.28
50th-Percentile Queue Length [ft/ln]	1.65	488.47	29.78	62.57	21.11	613.97	254.62	32.01
95th-Percentile Queue Length [veh/ln]	0.12	26.91	2.14	4.51	1.52	37.41	18.33	2.30
95th-Percentile Queue Length [ft/ln]	2.97	672.86	53.61	112.63	37.99	935.13	458.32	57.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.79	56.41	56.41	20.55	12.41	12.41	30.28	179.90	179.90	378.39	26.02	26.02
Movement LOS	A	E	E	C	B	B	C	F	F	F	C	C
d_A, Approach Delay [s/veh]	55.77		15.13			167.24			255.57			
Approach LOS	E		B			F			F			
d_I, Intersection Delay [s/veh]	106.41											
Intersection LOS	F											
Intersection V/C	0.777											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.469

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Northbound				Southbound				Eastbound				Westbound				
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd			
	Base Volume Input [veh/h]	40	0	1170	260	310	890	0	32	1085	209	60	0	50	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	15	0	2	4	0	0	0	0	0	0	0	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	40	0	1185	260	312	894	0	32	1085	209	60	0	50	0	0	
Peak Hour Factor	1.000	1.000	0.913	0.913	0.9733	0.9733	1.0000	1.0000	1.0000	1.0000	1.0000	0.8241	1.0000	0.8241	1.0000	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
Total 15-Minute Volume [veh/h]	10	0	324	71	80	230	0	8	271	52	18	0	15	0	0	
Total Analysis Volume [veh/h]	40	0	1298	285	321	918	0	32	1085	209	73	0	61	0	0	
Presence of On-Street Parking	No			No	No	No	No	No	No	No	No	No	No	No	No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	25				40				0				0			
Bicycle Volume [bicycles/h]	0				3				13				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	60.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0	0
Auxiliary Signal Groups														
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Split [s]	10	0	53	0	10	53	0	0	0	0	27	0	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0	0
Rest in Walk		No				No					No			
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No			
Maximum Recall	No		No		No	No					No			
Pedestrian Recall	No		No		No	No					No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	53	53	66	58	15	15
g / C, Green / Cycle	0.04	0.59	0.59	0.73	0.64	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.36	0.18	0.50	0.25	0.04	0.04
s, saturation flow rate [veh/h]	1810	3618	1615	644	3618	1730	1501
c, Capacity [veh/h]	64	2145	958	489	2319	294	255
d1, Uniform Delay [s]	42.79	11.62	9.05	12.25	7.77	32.37	32.31
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.59	1.28	0.79	6.75	0.51	0.16	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

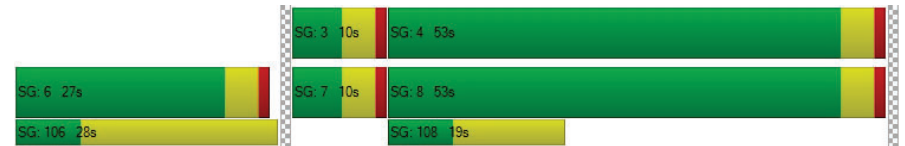
X, volume / capacity	0.62	0.61	0.30	0.66	0.40	0.25	0.24
d, Delay for Lane Group [s/veh]	46.38	12.90	9.84	19.00	8.28	32.53	32.49
Lane Group LOS	D	B	A	B	A	C	C
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	7.74	2.73	2.44	3.90	1.38	1.15
50th-Percentile Queue Length [ft/ln]	23.32	193.61	68.23	61.09	97.50	34.39	28.73
95th-Percentile Queue Length [veh/ln]	1.68	12.31	4.91	4.40	7.02	2.48	2.07
95th-Percentile Queue Length [ft/ln]	41.97	307.71	122.81	109.96	175.51	61.90	51.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.38	0.00	12.90	9.84	19.00	8.28	0.00	0.00	0.00	0.00	32.53	0.00	32.49
Movement LOS	D		B	A	B	A					C		C
d_A, Approach Delay [s/veh]	13.19			11.05			0.00			32.51			
Approach LOS	B			B			A			C			
d_I, Intersection Delay [s/veh]	13.17												
Intersection LOS	B												
Intersection V/C	0.469												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 49.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.949

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	30	2560	2	340	2310	10	20	10	20	10	10	370
Base Volume Input [veh/h]	30	2560	2	340	2310	10	20	10	20	10	10	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	4	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	2560	2	344	2310	10	20	10	20	14	10	374
Peak Hour Factor	0.8616	0.8616	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	743	1	88	591	3	8	4	8	4	3	113
Total Analysis Volume [veh/h]	35	2971	2	352	2363	10	32	16	32	17	12	450
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes	No	No	Yes	No	No	No	No	No	No	No	
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	272	272	272	272	272	272	272	272
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	7	157	55	206	206	45	45	105
g / C, Green / Cycle	0.03	0.58	0.20	0.76	0.76	0.17	0.17	0.38
(v / s)_i Volume / Saturation Flow Rate	0.02	0.57	0.19	0.43	0.43	0.06	0.02	0.28
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1896	1404	1332	1615
c, Capacity [veh/h]	45	2988	368	2733	1433	251	241	620
d1, Uniform Delay [s]	131.98	57.08	107.26	14.27	14.29	102.68	96.84	71.60
k, delay calibration	0.04	0.04	0.25	0.04	0.11	0.04	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.67	3.52	24.44	0.07	0.36	0.27	0.08	7.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

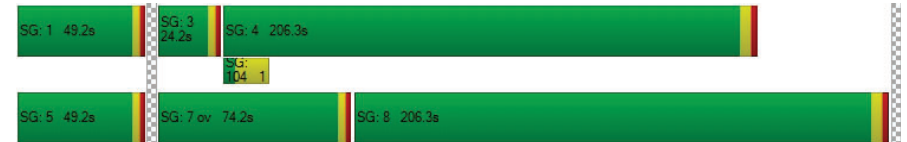
X, volume / capacity	0.79	0.99	0.96	0.57	0.57	0.32	0.12	0.73
d, Delay for Lane Group [s/veh]	142.64	60.60	131.71	14.34	14.65	102.95	96.92	78.84
Lane Group LOS	F	E	F	B	B	F	F	E
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.64	66.97	27.26	20.39	21.55	5.20	1.80	28.64
50th-Percentile Queue Length [ft/ln]	65.90	1674.33	681.53	509.87	538.84	129.91	45.01	715.93
95th-Percentile Queue Length [veh/ln]	4.75	80.39	35.82	27.80	29.17	8.93	3.24	37.41
95th-Percentile Queue Length [ft/ln]	118.63	2009.86	895.60	695.03	729.18	223.37	81.02	935.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	142.64	60.60	0.00	131.71	14.44	14.65	102.95	102.95	102.95	96.92	96.92	78.84
Movement LOS	F	E		F	B	B	F	F	F	F	F	E
d_A, Approach Delay [s/veh]	61.56		29.59		102.95		79.94					
Approach LOS	E		C		F		E					
d_I, Intersection Delay [s/veh]	49.63											
Intersection LOS	D											
Intersection V/C	0.949											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 158.0
Level Of Service: F
Volume to Capacity (v/c): 1.152

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0	100.0	100.0	100.0
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	310	560	80	20	390	40	40	80	250	0	50	160	70
Base Volume Input [veh/h]	310	560	80	20	390	40	40	80	250	0	50	160	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	8	0	0	10	0	0	0	4	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	318	568	80	20	400	40	40	80	254	0	50	160	70
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	151	21	6	114	11	11	22	70	0	16	50	22
Total Analysis Volume [veh/h]	339	605	85	23	458	46	44	88	278	0	63	201	88
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [1/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No					No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No				No
Maximum Recall	No	No		No	No			No	No				No
Pedestrian Recall	No	No		No	No			No	No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	61	61	2	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.61	0.61	0.02	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.19	0.32	0.07	0.01	0.24	0.03	0.32	0.18	0.72	0.10
s, saturation flow rate [veh/h]	1810	1900	1270	1810	1900	1352	407	1518	365	860
c, Capacity [veh/h]	189	1164	778	43	1012	720	123	570	112	159
d1, Uniform Delay [s]	44.75	10.99	8.03	48.21	14.39	11.31	40.01	23.86	40.17	36.98
k, delay calibration	0.38	0.50	0.50	0.04	0.50	0.50	0.50	0.10	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	372.94	1.66	0.28	3.68	1.46	0.17	100.99	0.58	636.39	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

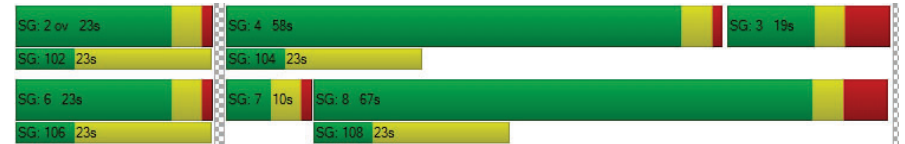
X, volume / capacity	1.79	0.52	0.11	0.53	0.45	0.06	1.07	0.49	2.35	0.55
d, Delay for Lane Group [s/veh]	417.69	12.65	8.31	51.89	15.86	11.48	141.00	24.44	676.57	38.09
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	24.21	7.50	0.78	0.61	6.49	0.51	6.55	5.10	22.58	1.96
50th-Percentile Queue Length [ft/ln]	605.34	187.50	19.40	15.22	162.32	12.85	163.82	127.40	564.58	49.11
95th-Percentile Queue Length [veh/ln]	38.46	11.99	1.40	1.10	10.67	0.93	11.09	8.80	38.53	3.54
95th-Percentile Queue Length [ft/ln]	961.40	299.79	34.92	27.39	266.79	23.13	277.16	219.95	963.27	88.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	417.69	12.65	8.31	51.89	15.86	11.48	141.00	141.00	24.44	676.5	676.5	676.5	38.09
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	145.73			17.05			61.96			516.95			
Approach LOS	F			B			E			F			
d_I, Intersection Delay [s/veh]	158.03												
Intersection LOS	F												
Intersection V/C	1.152												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 45.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.462

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	550	240	180	470	300	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	6	0	14	-1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	566	246	180	484	299	350
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	67	47	128	86	101
Total Analysis Volume [veh/h]	612	266	190	511	344	403
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.17	0.19	0.20	0.14	0.20	0.15	0.23
s, saturation flow rate [veh/h]	3618	1370	959	3618	1299	1676	1064
c, Capacity [veh/h]	2090	792	700	2509	226	292	186
d1, Uniform Delay [s]	10.73	11.06	5.76	5.46	41.27	39.95	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.25	0.07	0.33
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.36	1.15	0.96	0.18	90.66	4.39	155.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

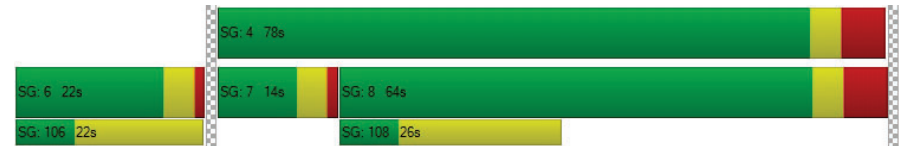
X, volume / capacity	0.29	0.34	0.27	0.20	1.15	0.84	1.29
d, Delay for Lane Group [s/veh]	11.08	12.21	6.71	5.65	131.93	44.35	196.83
Lane Group LOS	B	B	A	A	F	D	F
Critical Lane Group	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.36	3.17	1.38	1.74	11.20	6.15	12.53
50th-Percentile Queue Length [ft/ln]	83.93	79.21	34.47	43.40	280.07	153.79	313.13
95th-Percentile Queue Length [veh/ln]	6.04	5.70	2.48	3.12	17.80	10.22	20.43
95th-Percentile Queue Length [ft/ln]	151.08	142.58	62.04	78.12	445.04	255.48	510.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.08	12.21	6.71	5.65	108.71	137.57
Movement LOS	B	B	A	A	F	F
d_A, Approach Delay [s/veh]	11.42		5.94		123.87	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	45.88					
Intersection LOS	D					
Intersection V/C	0.462					

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 12.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.348

Intersection Setup

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Arizona Ave	
Base Volume Input [veh/h]	760	90	60	800	50	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	44	16	-3	-4	-1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	783	134	76	797	46	109
Peak Hour Factor	0.9093	0.9093	0.9413	0.9413	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	37	20	212	14	32
Total Analysis Volume [veh/h]	861	147	81	847	54	129
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389		253	
Bicycle Volume [bicycles/h]	6		7		22	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	4	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	69	69	69	69	31	31
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	18	18
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.24	0.11	0.12	0.23	0.11
s, saturation flow rate [veh/h]	3618	1339	649	3618	1668
c, Capacity [veh/h]	2236	827	380	2236	417
d1, Uniform Delay [s]	9.56	8.18	15.72	9.51	31.57
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.50	0.47	1.28	0.49	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

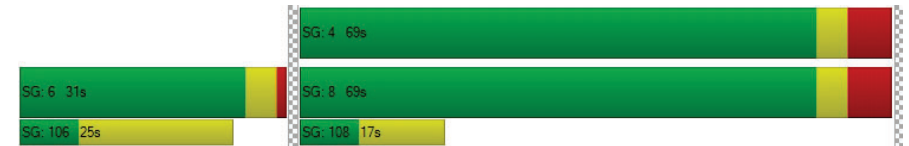
X, volume / capacity	0.39	0.18	0.21	0.38	0.44
d, Delay for Lane Group [s/veh]	10.06	8.65	17.00	10.00	31.85
Lane Group LOS	B	A	B	A	C
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.51	1.38	1.22	4.42	3.67
50th-Percentile Queue Length [ft/ln]	112.82	34.53	30.40	110.41	91.85
95th-Percentile Queue Length [veh/ln]	8.00	2.49	2.19	7.86	6.61
95th-Percentile Queue Length [ft/ln]	199.92	62.16	54.71	196.57	165.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.06	8.65	17.00	10.00	31.85	31.85
Movement LOS	B	A	B	A	C	C
d_A, Approach Delay [s/veh]	9.86		10.61		31.85	
Approach LOS	A		B		C	
d_I, Intersection Delay [s/veh]	12.09					
Intersection LOS	B					
Intersection V/C	0.348					

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 27.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.476

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	770	190	90	760	150	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	-6	-2	-2	4	28
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	805	184	88	758	154	118
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	227	52	25	217	42	33
Total Analysis Volume [veh/h]	908	207	101	866	170	130
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.25	0.16	0.13	0.24	0.20	0.10
s, saturation flow rate [veh/h]	3618	1296	785	3618	832	1238
c, Capacity [veh/h]	2190	785	595	2618	120	325
d1, Uniform Delay [s]	10.39	9.27	5.06	5.02	42.78	30.37
k, delay calibration	0.50	0.50	0.50	0.50	0.26	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	0.82	0.62	0.34	210.79	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.26	0.17	0.33	1.42	0.40
d, Delay for Lane Group [s/veh]	10.98	10.09	5.68	5.36	253.57	30.66
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.08	2.17	0.61	2.85	9.96	2.58
50th-Percentile Queue Length [ft/ln]	127.05	54.31	15.35	71.19	249.01	64.50
95th-Percentile Queue Length [veh/ln]	8.78	3.91	1.11	5.13	17.14	4.64
95th-Percentile Queue Length [ft/ln]	219.48	97.76	27.63	128.14	428.55	116.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.98	10.09	5.68	5.36	253.57	30.66
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	10.81		5.39		156.97	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	27.02					
Intersection LOS	C					
Intersection V/C	0.476					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 37.9
Level Of Service: D
Volume to Capacity (v/c): 0.472

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	20	730	142	67	750	90	20	13	80	190	10	170
Base Volume Input [veh/h]	20	730	142	67	750	90	20	13	80	190	10	170
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	0	0	2	0	0	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	747	142	67	752	90	20	13	80	190	10	180
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	210	41	18	197	24	6	6	23	53	3	51
Total Analysis Volume [veh/h]	22	838	165	71	790	95	23	24	94	213	11	202
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	78	78	70	70	12	25	25
g / C, Green / Cycle	0.52	0.52	0.47	0.47	0.08	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.03	0.23	0.23	0.24	0.07	0.12	0.15
s, saturation flow rate [veh/h]	722	3618	1900	1817	1650	1814	1336
c, Capacity [veh/h]	337	1882	892	853	136	299	220
d1, Uniform Delay [s]	19.83	22.46	27.53	27.92	67.90	59.67	61.61
k, delay calibration	0.04	0.50	0.50	0.50	0.14	0.07	0.18
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	0.77	1.97	2.25	17.06	2.38	20.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

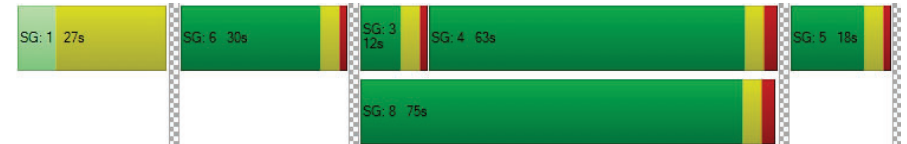
X, volume / capacity	0.07	0.45	0.50	0.52	0.86	0.75	0.92
d, Delay for Lane Group [s/veh]	19.86	23.23	29.50	30.17	84.96	62.05	82.19
Lane Group LOS	B	C	C	C	F	E	F
Critical Lane Group	Yes	No	No	Yes	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.38	9.53	11.57	11.78	5.07	8.41	8.91
50th-Percentile Queue Length [ft/ln]	9.59	238.15	289.36	294.41	126.67	210.25	222.64
95th-Percentile Queue Length [veh/ln]	0.69	14.59	17.15	17.40	8.76	13.17	13.80
95th-Percentile Queue Length [ft/ln]	17.27	364.69	428.85	435.10	218.96	329.14	345.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.86	23.23	0.00	0.00	29.80	30.17	84.96	0.00	84.96	62.05	62.05	82.19
Movement LOS	B	C			C	C	F		F	E	E	F
d_A, Approach Delay [s/veh]	23.14		29.84			84.96		71.60				
Approach LOS	C		C			F		E				
d_I, Intersection Delay [s/veh]	37.91											
Intersection LOS	D											
Intersection V/C	0.472											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 25.4
Level Of Service: C
Volume to Capacity (v/c): 0.498

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	360	620	930	50	110	640
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	637	932	50	110	640
Peak Hour Factor	0.9528	0.9528	0.9744	0.9744	0.9594	0.9594
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	167	239	13	29	167
Total Analysis Volume [veh/h]	378	669	956	51	115	667
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	78	78	78	13	33
g / C, Green / Cycle	0.13	0.65	0.65	0.65	0.11	0.27
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.26	0.04	0.09	0.23
s, saturation flow rate [veh/h]	3514	3618	3618	1342	1221	2859
c, Capacity [veh/h]	442	2357	2357	875	131	777
d1, Uniform Delay [s]	51.35	8.94	9.90	7.57	52.70	41.47
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.87	0.30	0.52	0.13	6.83	1.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

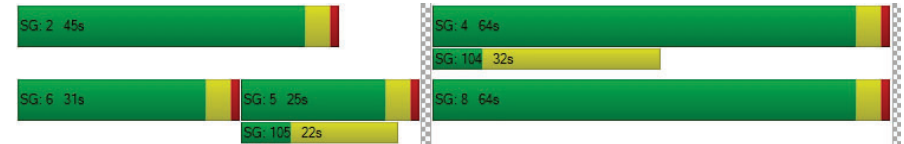
X, volume / capacity	0.86	0.28	0.41	0.06	0.87	0.86
d, Delay for Lane Group [s/veh]	53.22	9.24	10.42	7.70	59.54	42.57
Lane Group LOS	D	A	B	A	E	D
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.67	3.68	5.84	0.49	3.83	10.00
50th-Percentile Queue Length [ft/ln]	141.85	92.05	146.06	12.34	95.71	250.08
95th-Percentile Queue Length [veh/ln]	9.58	6.63	9.81	0.89	6.89	15.19
95th-Percentile Queue Length [ft/ln]	239.51	165.68	245.16	22.22	172.28	379.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.22	9.24	10.42	7.70	59.54	42.57
Movement LOS	D	A	B	A	E	D
d_A, Approach Delay [s/veh]	25.12		10.28		45.07	
Approach LOS	C		B		D	
d_I, Intersection Delay [s/veh]	25.35					
Intersection LOS	C					
Intersection V/C	0.498					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 37.6
Level Of Service: D
Volume to Capacity (v/c): 0.556

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					TTL				TTL			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	40	120	40	3	280	98	150	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	40	120	40	3	280	98	150	232
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	13	40	13	1	74	26	40	62
Total Analysis Volume [veh/h]	0	0	0	0	53	159	53	3	295	103	161	249
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	6				70				188			
Bicycle Volume [bicycles/h]	33				8				56			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0	
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-	
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-	
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0	
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0	
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0	
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0	
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0	
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0	
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0	
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0	
Rest in Walk					No						No		
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0	
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0	
Minimum Recall					Yes				Yes		Yes		
Maximum Recall					No				No		No		
Pedestrian Recall					No				No		No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	50	50	50	62	62	62
g / C, Green / Cycle	0.41	0.41	0.41	0.51	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.04	0.06	0.07	0.23	0.08	0.17
s, saturation flow rate [veh/h]	1187	1900	1554	1289	1900	1458
c, Capacity [veh/h]	476	788	644	701	978	750
d1, Uniform Delay [s]	26.46	21.80	22.03	17.47	15.44	17.04
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.36	0.54	1.85	0.36	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.14	0.16	0.42	0.16	0.33
d, Delay for Lane Group [s/veh]	26.93	22.16	22.57	19.32	15.81	18.23
Lane Group LOS	C	C	C	B	B	B
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.09	1.96	1.92	4.97	2.40	4.17
50th-Percentile Queue Length [ft/ln]	27.25	49.03	48.00	124.15	59.92	104.27
95th-Percentile Queue Length [veh/ln]	1.96	3.53	3.46	8.62	4.31	7.51
95th-Percentile Queue Length [ft/ln]	49.05	88.25	86.40	215.52	107.86	187.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	26.93	22.29	22.57	0.00	19.32	0.00	15.81	18.23
Movement LOS					C	C	C		B		B	B
d_A, Approach Delay [s/veh]	0.00				23.27			18.13				
Approach LOS	A				C			B				
d_I, Intersection Delay [s/veh]	37.63											
Intersection LOS	D											
Intersection V/C	0.556											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	20	670	130	220	1240	65	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	0	-3	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	20	675	130	217	1244	65	50
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	179	34	60	345	17	13
Total Analysis Volume [veh/h]	1	21	716	138	241	1380	69	52
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	31	31	31	49	49	49
g / C, Green / Cycle	0.26	0.26	0.26	0.41	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.06	0.20	0.11	0.22	0.38	0.39
s, saturation flow rate [veh/h]	379	3618	1244	1085	1900	1854
c, Capacity [veh/h]	60	948	326	397	777	758
d1, Uniform Delay [s]	59.98	40.72	36.73	27.14	33.71	34.10
k, delay calibration	0.04	0.04	0.04	0.04	0.33	0.38
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.29	0.47	0.32	0.60	13.57	17.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

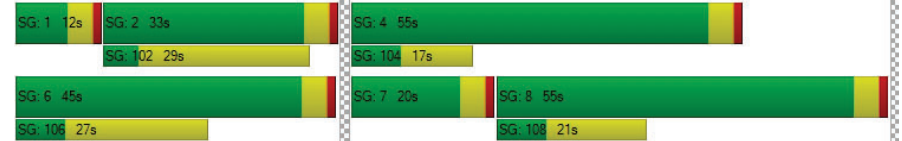
X, volume / capacity	0.35	0.76	0.42	0.61	0.92	0.94
d, Delay for Lane Group [s/veh]	61.27	41.18	37.06	27.74	47.28	51.71
Lane Group LOS	E	D	D	C	D	D
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.66	9.75	3.40	4.74	22.35	23.23
50th-Percentile Queue Length [ft/ln]	16.52	243.73	84.96	118.58	558.80	580.84
95th-Percentile Queue Length [veh/ln]	1.19	14.87	6.12	8.31	30.11	31.14
95th-Percentile Queue Length [ft/ln]	29.74	371.75	152.93	207.87	752.64	778.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	61.27	41.18	37.06	27.74	49.41	0.00	51.71
Movement LOS		E	D	D	C	D		D
d_A, Approach Delay [s/veh]	41.01			46.36				
Approach LOS	D			D				
d_I, Intersection Delay [s/veh]	37.63							
Intersection LOS	D							
Intersection V/C	0.556							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	126.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.927

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	0	60	90	110	0	80	90	40	50	230	50	0	120	350	170	
Base Volume Input [veh/h]	0	60	90	110	0	80	90	40	50	230	50	0	120	350	170	
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	-1	0	-9	0	0	0	0	0	6	0	0	6	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	59	90	101	0	80	90	40	50	236	50	0	126	350	170	
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	0.8684	0.8684	0.8684	1.000	0.968	0.968	0.968	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Total 15-Minute Volume [veh/h]	0	16	24	27	0	22	24	11	14	68	14	0	33	90	44	
Total Analysis Volume [veh/h]	0	63	96	108	0	87	97	43	58	272	58	0	130	362	176	
Presence of On-Street Parking	No			No	No			No	No		No	No	No		No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	2	2	2	0	6	6	6
Auxiliary Signal Groups															
Lead / Lag	-	Lag	-	-	-	Lag	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	14	14	14	0	14	14	14
Rest in Walk															
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No		Yes				Yes		
Maximum Recall			No				No		No				No		
Pedestrian Recall			No				No		No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.05	0.12	0.75	0.07	0.18	0.12	0.15	0.15
s, saturation flow rate [veh/h]	1269	1708	304	881	1834	1067	1900	1654
c, Capacity [veh/h]	73	265	94	381	867	425	898	782
d1, Uniform Delay [s]	50.02	40.55	46.49	22.56	16.97	25.50	16.35	16.45
k, delay calibration	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.60	1.79	669.70	0.85	1.27	1.86	0.92	1.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.77	2.42	0.15	0.38	0.31	0.32	0.33
d, Delay for Lane Group [s/veh]	60.61	42.34	716.20	23.41	18.24	27.36	17.27	17.56
Lane Group LOS	E	D	F	C	B	C	B	B
Critical Lane Group	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.77	4.85	19.77	1.03	5.03	2.54	4.14	3.78
50th-Percentile Queue Length [ft/ln]	44.23	121.32	494.32	25.73	125.86	63.53	103.42	94.59
95th-Percentile Queue Length [veh/ln]	3.18	8.47	33.71	1.85	8.71	4.57	7.45	6.81
95th-Percentile Queue Length [ft/ln]	79.62	211.64	842.71	46.31	217.86	114.36	186.16	170.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	60.61	60.61	42.34	42.34	716.2	716.2	716.2	716.2	23.41	18.24	18.24	27.36	27.36	17.34	17.56
Movement LOS	E	E	D	D	F	F	F	F	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	46.65				716.20				19.02		19.35				
Approach LOS	D				F				B		B				
d_I, Intersection Delay [s/veh]	126.02														
Intersection LOS	F														
Intersection V/C	0.927														

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 30.0
Level Of Service: C
Volume to Capacity (v/c): 0.454

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Base Volume Input [veh/h]	50	260	110	70	170	20	20	140	60	50	110	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	-4	-10	0	-1	6	0	0	0	-1	38	-5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	256	100	70	169	26	20	140	60	49	148	105
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	68	26	21	50	8	6	43	18	14	42	30
Total Analysis Volume [veh/h]	80	270	106	83	200	31	25	173	74	56	168	119
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	13	13	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	46	46
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.07	0.14	0.07	0.07	0.13	0.16	0.31
s, saturation flow rate [veh/h]	1168	1900	1545	1127	1842	1704	1100
c, Capacity [veh/h]	204	456	371	180	442	820	546
d1, Uniform Delay [s]	42.22	33.66	31.01	44.09	33.02	17.31	21.34
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.46	0.16	0.68	0.36	1.09	5.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

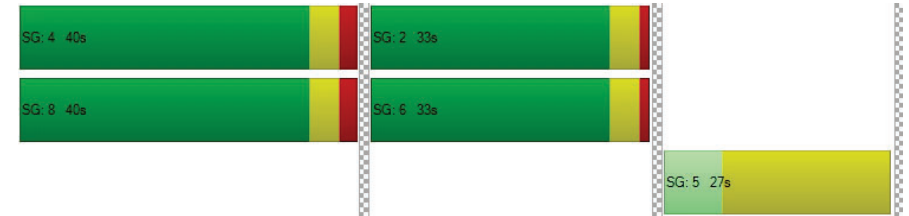
X, volume / capacity	0.39	0.59	0.29	0.46	0.52	0.33	0.63
d, Delay for Lane Group [s/veh]	42.68	34.12	31.16	44.77	33.38	18.39	26.75
Lane Group LOS	D	C	C	D	C	B	C
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.88	5.73	2.07	2.01	4.80	4.07	6.87
50th-Percentile Queue Length [ft/ln]	46.91	143.26	51.68	50.17	120.11	101.72	171.87
95th-Percentile Queue Length [veh/ln]	3.38	9.66	3.72	3.61	8.40	7.32	11.17
95th-Percentile Queue Length [ft/ln]	84.44	241.41	93.02	90.30	209.97	183.09	279.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.68	34.12	31.16	44.77	33.38	33.38	18.39	18.39	18.39	26.75	26.75	26.75
Movement LOS	D	C	C	D	C	C	B	B	B	C	C	C
d_A, Approach Delay [s/veh]	34.94			36.39			18.39			26.75		
Approach LOS	C			D			B			C		
d_I, Intersection Delay [s/veh]	29.99											
Intersection LOS	C											
Intersection V/C	0.454											

Sequence

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



Intersection Level Of Service Report

Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 167.3
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.339

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	20	140	90	50	160	90	100	200	20	150	240	160
Base Volume Input [veh/h]	20	140	90	50	160	90	100	200	20	150	240	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-5	9	-9	52	38	46	-1	-17	-7	0	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	149	81	102	198	136	99	183	13	150	242	166
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	42	23	28	55	38	27	50	4	43	70	48
Total Analysis Volume [veh/h]	17	168	91	113	220	151	107	198	14	172	278	191
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	0	7	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.09	0.06	0.09	0.21	0.76	0.01	1.13	0.12
s, saturation flow rate [veh/h]	1027	1900	1524	1237	1732	400	1570	400	1581
c, Capacity [veh/h]	72	370	297	193	337	250	789	251	795
d1, Uniform Delay [s]	49.97	35.56	34.48	44.74	40.25	29.74	12.47	29.83	14.05
k, delay calibration	0.04	0.04	0.04	0.04	0.27	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	0.33	0.22	1.05	66.86	130.02	0.04	372.71	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

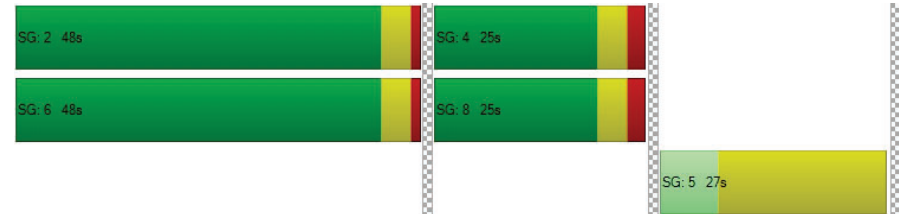
X, volume / capacity	0.23	0.45	0.31	0.58	1.10	1.22	0.02	1.79	0.24
d, Delay for Lane Group [s/veh]	50.58	35.89	34.69	45.79	107.11	159.77	12.51	402.55	14.77
Lane Group LOS	D	D	C	D	F	F	B	F	B
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.43	3.58	1.88	2.79	14.31	15.24	0.16	32.22	2.53
50th-Percentile Queue Length [ft/ln]	10.79	89.59	47.05	69.63	357.85	380.88	4.08	805.41	63.18
95th-Percentile Queue Length [veh/ln]	0.78	6.45	3.39	5.01	21.55	24.57	0.29	55.33	4.55
95th-Percentile Queue Length [ft/ln]	19.42	161.26	84.69	125.33	538.78	614.28	7.34	1383.29	113.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.58	35.89	34.69	45.79	107.11	107.11	159.77	159.77	12.51	402.55	402.55	14.77
Movement LOS	D	D	C	D	F	F	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	36.40			92.79			153.31			287.00		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	167.34											
Intersection LOS	F											
Intersection V/C	1.339											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 30.0
Level Of Service: C
Volume to Capacity (v/c): 0.411

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	50	170	180	80	310	20	20	110	170	140	290	290
Base Volume Input [veh/h]	50	170	180	80	310	20	20	110	170	140	290	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	4	27	0	-2	0	0	0	0	-9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	178	180	84	337	20	18	110	170	140	290	281
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	53	53	22	90	5	5	29	44	40	84	81
Total Analysis Volume [veh/h]	59	211	213	90	360	21	19	115	178	162	335	324
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.06	0.11	0.14	0.08	0.20	0.02	0.17	0.15	0.18	0.21
s, saturation flow rate [veh/h]	1018	1900	1473	1189	1877	1062	1680	1103	1900	1559
c, Capacity [veh/h]	106	464	360	228	459	377	727	391	823	675
d1, Uniform Delay [s]	49.01	32.11	33.37	40.80	35.81	25.87	19.47	29.63	19.52	20.29
k, delay calibration	0.04	0.04	0.04	0.04	0.14	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.67	0.26	0.58	0.41	4.89	0.25	1.66	3.22	1.49	2.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

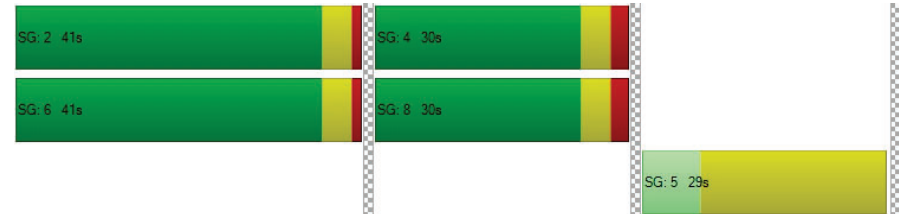
X, volume / capacity	0.55	0.45	0.59	0.39	0.83	0.05	0.40	0.41	0.41	0.48
d, Delay for Lane Group [s/veh]	50.68	32.36	33.95	41.21	40.70	26.12	21.13	32.85	21.01	22.73
Lane Group LOS	D	C	C	D	D	C	C	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.50	4.28	4.51	2.07	9.17	0.35	4.82	3.51	5.48	5.62
50th-Percentile Queue Length [ft/ln]	37.62	106.95	112.77	51.82	229.28	8.73	120.40	87.66	136.91	140.50
95th-Percentile Queue Length [veh/ln]	2.71	7.67	7.99	3.73	14.14	0.63	8.42	6.31	9.31	9.51
95th-Percentile Queue Length [ft/ln]	67.71	191.75	199.86	93.28	353.44	15.71	210.38	157.79	232.85	237.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.68	32.36	33.95	41.21	40.70	40.70	26.12	21.13	21.13	32.85	21.01	22.73
Movement LOS	D	C	C	D	D	D	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	35.30			40.80			21.44			24.02		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	30.03											
Intersection LOS	C											
Intersection V/C	0.411											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 37.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.454

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	10	340	0	29	400	50	66	90	0	150	310
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	27	0	0	0	0	0	10	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	344	0	29	427	50	66	90	0	150	320	183
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	92	0	8	115	13	20	27	0	40	85	49
Total Analysis Volume [veh/h]	11	369	0	31	459	54	79	108	0	159	340	194
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	34	34	34	34	57	57
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.01	0.20	0.25	0.04	0.20	0.21
s, saturation flow rate [veh/h]	929	1863	1863	1407	1861	1525
c, Capacity [veh/h]	87	527	527	398	881	722
d1, Uniform Delay [s]	57.23	38.46	40.93	32.07	20.83	20.99
k, delay calibration	0.04	0.16	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	2.44	17.68	0.06	1.51	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.70	0.87	0.14	0.43	0.44
d, Delay for Lane Group [s/veh]	57.47	40.90	58.61	32.13	22.34	22.93
Lane Group LOS	E	D	E	C	C	C
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.33	10.03	15.25	1.17	7.37	6.35
50th-Percentile Queue Length [ft/ln]	8.35	250.76	381.37	29.35	184.37	158.68
95th-Percentile Queue Length [veh/ln]	0.60	15.22	21.66	2.11	11.83	10.48
95th-Percentile Queue Length [ft/ln]	15.03	380.61	541.50	52.84	295.72	261.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.47	40.90	0.00	0.00	58.61	32.13	0.00	0.00	0.00	22.34	22.56	22.93
Movement LOS	E	D			E	C				C	C	C
d_A, Approach Delay [s/veh]	41.38		55.82		0.00		22.61					
Approach LOS	D		E		A		C					
d_I, Intersection Delay [s/veh]	37.85											
Intersection LOS	D											
Intersection V/C	0.454											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.423

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	90	240	120	190	320	30	40	240	40	260	530	60
Base Volume Input [veh/h]	90	240	120	190	320	30	40	240	40	260	530	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	14	4	0	0	-3	0	0	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	244	120	204	324	30	40	237	40	260	542	60
Peak Hour Factor	0.9142	0.9142	0.9142	0.8503	0.8503	0.8503	0.9531	0.9531	0.9531	0.9548	0.9548	0.9548
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	67	33	60	95	9	10	62	10	68	142	16
Total Analysis Volume [veh/h]	98	267	131	240	381	35	42	249	42	272	568	63
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	38	38	38	51	51	51	30	15	15	30	22	22
g / C, Green / Cycle	0.43	0.43	0.43	0.57	0.57	0.57	0.33	0.16	0.16	0.33	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.08	0.19	0.20	0.02	0.05	0.08	0.09	0.19	0.17	0.17
s, saturation flow rate [veh/h]	1013	1900	1545	1273	1900	1570	814	1900	1659	1414	1900	1784
c, Capacity [veh/h]	377	811	659	734	1079	892	341	310	270	502	460	432
d1, Uniform Delay [s]	24.91	17.23	16.18	10.22	10.51	8.59	22.17	34.20	34.53	24.15	31.13	31.31
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.49	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.67	1.09	0.68	1.19	0.91	0.08	0.06	0.42	0.60	4.04	0.72	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

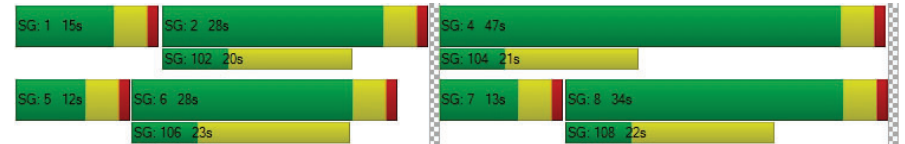
X, volume / capacity	0.26	0.33	0.20	0.33	0.35	0.04	0.12	0.48	0.53	0.54	0.70	0.72
d, Delay for Lane Group [s/veh]	26.59	18.31	16.85	11.40	11.41	8.67	22.23	34.62	35.13	28.20	31.85	32.16
Lane Group LOS	C	B	B	B	B	A	C	C	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.75	3.73	1.73	2.37	3.93	0.30	0.59	2.89	2.84	4.94	6.21	6.05
50th-Percentile Queue Length [ft/ln]	43.86	93.22	43.23	59.19	98.34	7.39	14.82	72.24	71.09	123.40	155.35	151.16
95th-Percentile Queue Length [veh/ln]	3.16	6.71	3.11	4.26	7.08	0.53	1.07	5.20	5.12	8.58	10.30	10.08
95th-Percentile Queue Length [ft/ln]	78.94	167.80	77.81	106.55	177.00	13.30	26.68	130.03	127.95	214.49	257.55	251.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.59	18.31	16.85	11.40	11.41	8.67	22.23	34.83	35.13	28.20	31.98	32.16
Movement LOS	C	B	B	B	B	A	C	C	D	C	C	C
d_A, Approach Delay [s/veh]	19.56			11.26			33.28			30.86		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	23.47											
Intersection LOS	C											
Intersection V/C	0.423											

Sequence

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



Intersection Level Of Service Report

Intersection 29: FOURTH STREET/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 7.9
 Analysis Method: HCM 2010 Level Of Service: A
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.325

Intersection Setup

Name	4th St			4th St			California Ave			California Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			0.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			California Ave			California Ave		
	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Input [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	198	53	12	179	17	22	165	48	25	123	55
Peak Hour Factor	0.8437	0.8437	0.8437	0.9285	0.9285	0.9285	0.8506	0.8506	0.8506	0.9047	0.9047	0.9047
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	59	16	3	48	5	6	48	14	7	34	15
Total Analysis Volume [veh/h]	72	235	63	13	193	18	26	194	56	28	136	61
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	62			70			38			61		
Bicycle Volume [bicycles/h]	22			16			7			12		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	25	25	25	25	25	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	30	30	30	30	30	30	30	30	30	30	30	30
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	17	17	17	17	17	17	15	15	15	15	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C
C, Cycle Length [s]	31	31	31	31	31	31
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	11	11	11	10	10
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.01	0.11	0.16	0.13
s, saturation flow rate [veh/h]	1152	1773	1053	1855	1755	1677
c, Capacity [veh/h]	493	653	420	683	715	692
d1, Uniform Delay [s]	9.89	7.44	10.59	6.98	8.09	7.87
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.05	0.19	0.01	0.09	0.13	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

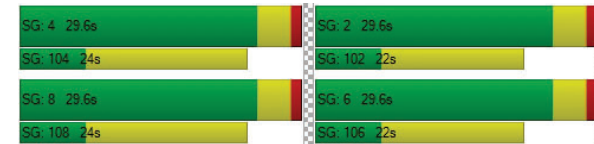
X, volume / capacity	0.15	0.46	0.03	0.31	0.39	0.32
d, Delay for Lane Group [s/veh]	9.94	7.62	10.60	7.08	8.22	7.97
Lane Group LOS	A	A	B	A	A	A
Critical Lane Group	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	0.86	0.05	0.57	1.39	0.70
50th-Percentile Queue Length [ft/ln]	6.94	21.50	1.33	14.18	34.81	17.46
95th-Percentile Queue Length [veh/ln]	0.50	1.55	0.10	1.02	2.51	1.26
95th-Percentile Queue Length [ft/ln]	12.50	38.69	2.39	25.52	62.65	31.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.94	7.62	7.62	10.60	7.08	7.08	8.22	8.22	8.22	7.97	7.97	7.97
Movement LOS	A	A	A	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.07			7.28			8.22			7.97		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.93											
Intersection LOS	A											
Intersection V/C	0.325											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	37.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	60	180	170	100	250	50	20	430	100	110	580	140
Base Volume Input [veh/h]	60	180	170	100	250	50	20	430	100	110	580	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	-3	0	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	180	170	100	250	50	20	430	97	110	585	140
Peak Hour Factor	0.7730	0.7730	0.7730	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	58	55	27	67	13	5	114	26	30	161	39
Total Analysis Volume [veh/h]	78	233	220	108	269	54	21	457	103	121	645	154
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	33	33	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.33	0.33	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.14	0.09	0.14	0.03	0.03	0.31	0.11	0.22	0.22
s, saturation flow rate [veh/h]	1128	1900	1577	1166	1900	1581	691	1832	1066	1900	1755
c, Capacity [veh/h]	117	368	306	143	368	307	175	603	322	844	780
d1, Uniform Delay [s]	48.95	37.12	37.85	48.12	37.94	33.72	37.38	32.49	21.86	19.77	19.83
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.40	0.67	1.20	3.05	1.05	0.10	1.39	22.74	0.27	2.02	2.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

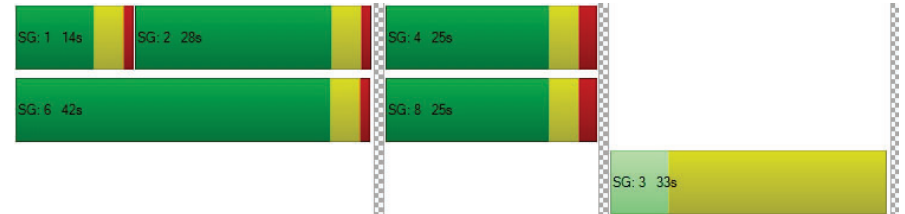
X, volume / capacity	0.66	0.63	0.72	0.76	0.73	0.18	0.12	0.93	0.38	0.49	0.49
d, Delay for Lane Group [s/veh]	51.35	37.79	39.05	51.17	38.99	33.82	38.77	55.23	22.13	21.79	22.07
Lane Group LOS	D	D	D	D	D	C	D	E	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.01	5.20	5.04	2.79	6.16	1.09	0.52	16.52	1.65	7.11	6.71
50th-Percentile Queue Length [ft/ln]	50.13	129.90	125.95	69.72	153.95	27.20	12.93	412.97	41.37	177.77	167.66
95th-Percentile Queue Length [veh/ln]	3.61	8.93	8.72	5.02	10.23	1.96	0.93	23.18	2.98	11.48	10.95
95th-Percentile Queue Length [ft/ln]	90.23	223.37	217.98	125.50	255.69	48.96	23.28	579.61	74.46	287.10	273.84

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.35	37.79	39.05	51.17	38.99	33.82	38.77	55.23	55.23	22.13	21.89	22.07
Movement LOS	D	D	D	D	D	C	D	E	E	C	C	C
d_A, Approach Delay [s/veh]	40.30			41.40			54.64			21.96		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	37.02											
Intersection LOS	D											
Intersection V/C	0.491											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 68.2
Level Of Service: E
Volume to Capacity (v/c): 0.634

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	30	330	60	40	470	30	20	150	210	80	240	50
Base Volume Input [veh/h]	30	330	60	40	470	30	20	150	210	80	240	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	0	0	-5	2	0	-4	-6	0	25	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	330	60	40	465	32	20	146	204	80	265	50
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	93	17	13	149	10	6	41	58	22	73	14
Total Analysis Volume [veh/h]	39	372	68	51	597	41	23	166	232	89	294	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	39	39	39	39	28
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.28
(v / s)_i Volume / Saturation Flow Rate	0.05	0.20	0.04	0.05	0.17	0.17	0.25
s, saturation flow rate [veh/h]	803	1900	1554	1026	1900	1848	1666
c, Capacity [veh/h]	266	746	610	296	746	725	511
d1, Uniform Delay [s]	30.21	22.94	19.29	32.12	22.21	22.25	34.08
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.29
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.16	2.38	0.37	1.26	1.82	1.90	8.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

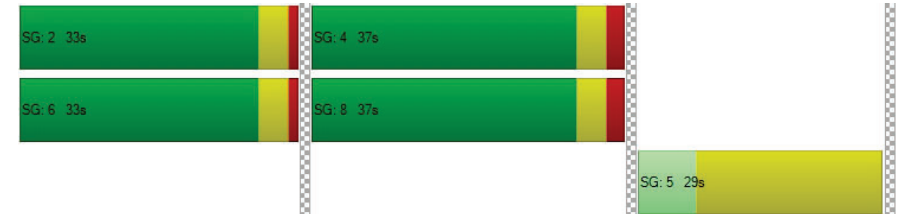
X, volume / capacity	0.15	0.50	0.11	0.17	0.43	0.44	0.82
d, Delay for Lane Group [s/veh]	31.37	25.31	19.66	33.38	24.04	24.14	42.75
Lane Group LOS	C	C	B	C	C	C	D
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.82	6.85	1.04	1.10	5.71	5.61	10.78
50th-Percentile Queue Length [ft/ln]	20.52	171.21	26.00	27.51	142.79	140.35	269.51
95th-Percentile Queue Length [veh/ln]	1.48	11.14	1.87	1.98	9.63	9.50	16.17
95th-Percentile Queue Length [ft/ln]	36.93	278.51	46.79	49.52	240.77	237.50	404.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.37	25.31	19.66	33.38	24.09	24.14	42.75	42.75	42.75	208.00	208.00	208.00
Movement LOS	C	C	B	C	C	C	D	D	D	F	F	F
d_A, Approach Delay [s/veh]	25.00		24.78			42.75			208.00			
Approach LOS	C		C			D			F			
d_I, Intersection Delay [s/veh]	68.15											
Intersection LOS	E											
Intersection V/C	0.634											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 26.7
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.375

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	100	340	70	170	560	80	0	210	100	0	370	100
Base Volume Input [veh/h]	100	340	70	170	560	80	0	210	100	0	370	100
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	-12	0	0	28	-1	0	8	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	343	70	170	548	80	0	238	99	0	378	102
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	104	21	46	148	22	0	64	27	0	108	29
Total Analysis Volume [veh/h]	121	415	85	183	591	86	0	257	107	0	431	116
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	52	52	52	52	52	52	18	18	18	18
g / C, Green / Cycle	0.52	0.52	0.52	0.52	0.52	0.52	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.16	0.22	0.05	0.19	0.18	0.18	0.14	0.07	0.14	0.16
s, saturation flow rate [veh/h]	774	1900	1583	987	1900	1805	1900	1559	1900	1747
c, Capacity [veh/h]	367	987	822	421	987	937	337	277	337	310
d1, Uniform Delay [s]	22.72	14.78	12.20	25.66	14.12	14.14	39.10	36.30	39.50	40.09
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.40	1.32	0.25	3.25	0.98	1.04	1.36	0.33	1.80	3.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

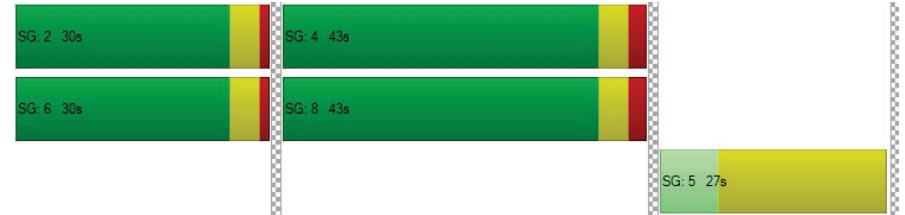
X, volume / capacity	0.33	0.42	0.10	0.44	0.35	0.35	0.76	0.39	0.81	0.88
d, Delay for Lane Group [s/veh]	25.12	16.09	12.46	28.92	15.10	15.19	40.46	36.63	41.30	43.37
Lane Group LOS	C	B	B	C	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.26	5.78	0.98	3.71	4.59	4.41	6.06	2.32	6.55	6.76
50th-Percentile Queue Length [ft/ln]	56.53	144.62	24.38	92.77	114.75	110.31	151.53	57.98	163.70	168.92
95th-Percentile Queue Length [veh/ln]	4.07	9.73	1.76	6.68	8.10	7.86	10.10	4.17	10.74	11.02
95th-Percentile Queue Length [ft/ln]	101.76	243.23	43.88	166.98	202.59	196.43	252.47	104.36	268.61	275.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.12	16.09	12.46	28.92	15.14	15.19	0.00	40.46	36.63	0.00	42.06	43.37
Movement LOS	C	B	B	C	B	B		D	D		D	D
d_A, Approach Delay [s/veh]	17.35		18.07		39.33		42.33					
Approach LOS	B		B		D		D					
d_I, Intersection Delay [s/veh]	26.67											
Intersection LOS	C											
Intersection V/C	0.375											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 45.5
Level Of Service: D
Volume to Capacity (v/c): 0.588

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	130	510	180	70	570	70	0	280	120	160	390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-4	3	0	0	-11	-2	0	-2	5	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	126	513	180	70	559	68	0	278	125	160	387	110
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	148	52	23	180	22	0	77	35	46	111	31
Total Analysis Volume [veh/h]	146	593	208	90	719	87	0	310	139	183	443	126
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	
Maximum Recall	No	No		No	No			No	No	No	No	
Pedestrian Recall	No	No		No	No			No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	11	43	43	54	38	38	22	38	34	34	34
g / C, Green / Cycle	0.10	0.36	0.36	0.45	0.32	0.32	0.18	0.31	0.28	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.08	0.31	0.13	0.09	0.22	0.22	0.16	0.09	0.14	0.23	0.08
s, saturation flow rate [veh/h]	1810	1900	1564	1004	1900	1817	1900	1561	1303	1900	1569
c, Capacity [veh/h]	172	679	559	294	605	578	341	489	282	532	439
d1, Uniform Delay [s]	53.50	36.06	28.61	24.98	35.62	35.69	48.33	31.13	36.49	40.63	33.88
k, delay calibration	0.09	0.50	0.50	0.50	0.50	0.50	0.13	0.04	0.46	0.22	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.93	14.54	1.89	2.67	6.05	6.45	11.08	0.12	10.28	6.95	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

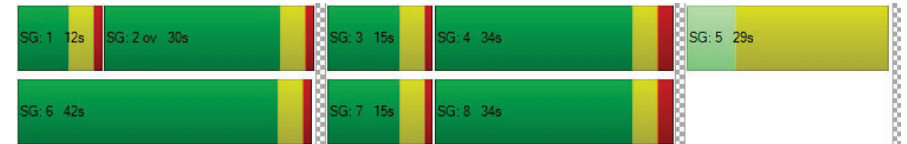
X, volume / capacity	0.85	0.87	0.37	0.31	0.68	0.68	0.91	0.28	0.65	0.83	0.29
d, Delay for Lane Group [s/veh]	62.42	50.60	30.50	27.65	41.67	42.14	59.41	31.25	46.78	47.57	34.01
Lane Group LOS	E	D	C	C	D	D	E	C	D	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.72	18.51	4.68	1.65	11.30	10.96	10.12	3.07	5.06	13.11	2.88
50th-Percentile Queue Length [ft/ln]	118.07	462.86	117.08	41.35	282.48	273.89	253.06	76.77	126.62	327.84	72.07
95th-Percentile Queue Length [veh/ln]	8.29	25.57	8.23	2.98	16.81	16.38	15.34	5.53	8.76	19.05	5.19
95th-Percentile Queue Length [ft/ln]	207.17	639.28	205.80	74.44	420.30	409.60	383.51	138.19	218.89	476.32	129.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.42	50.60	30.50	27.65	41.87	42.14	0.00	59.41	31.25	46.78	47.57	34.01
Movement LOS	E	D	C	C	D	D		E	C	D	D	C
d_A, Approach Delay [s/veh]	48.01			40.47			50.69			45.11		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.47											
Intersection LOS	D											
Intersection V/C	0.588											

Sequence

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



Intersection Level Of Service Report

Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 23.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.441

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T						T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	200	690	0	0	680	130	181	0	84	200	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	-1	0	0	-5	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	213	689	0	0	675	130	181	0	84	200	110	50
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	206	0	0	186	36	52	0	24	55	30	14
Total Analysis Volume [veh/h]	255	824	0	0	745	143	208	0	96	220	121	55
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	60	60	17	17
g / C, Green / Cycle	0.62	0.62	0.50	0.50	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.31	0.23	0.23	0.25	0.12	0.11
s, saturation flow rate [veh/h]	833	3618	1900	1769	1810	1626
c, Capacity [veh/h]	494	2233	944	879	252	227
d1, Uniform Delay [s]	13.25	11.39	19.84	20.30	50.61	49.85
k, delay calibration	0.37	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.81	0.47	1.68	2.07	3.69	2.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.37	0.47	0.51	0.87	0.78
d, Delay for Lane Group [s/veh]	16.06	11.86	21.52	22.37	54.30	52.02
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.32	5.41	8.35	8.60	6.78	5.28
50th-Percentile Queue Length [ft/ln]	82.89	135.30	208.75	214.93	169.49	131.89
95th-Percentile Queue Length [veh/ln]	5.97	9.23	13.09	13.41	11.05	9.04
95th-Percentile Queue Length [ft/ln]	149.20	230.68	327.22	335.15	276.25	226.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.06	11.86	0.00	0.00	21.86	22.37	0.00	0.00	0.00	54.30	52.02	52.02
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	12.85		21.95			0.00		53.29				
Approach LOS	B		C			A		D				
d_I, Intersection Delay [s/veh]	23.04											
Intersection LOS	C											
Intersection V/C	0.441											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 28.1
Level Of Service: C
Volume to Capacity (v/c): 0.580

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		920	380
	Northbound		Southbound			
Base Volume Input [veh/h]	360	0	0	940	920	380
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-3	0	0	-5	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	357	0	0	935	920	395
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	102	0	0	264	253	108
Total Analysis Volume [veh/h]	408	0	0	1058	1011	434
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	74	74	37	37
g / C, Green / Cycle	0.61	0.61	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.29	0.29	0.27
s, saturation flow rate [veh/h]	3618	3618	3514	1586
c, Capacity [veh/h]	2220	2220	1088	491
d1, Uniform Delay [s]	10.08	12.64	40.09	39.31
k, delay calibration	0.50	0.50	0.04	0.21
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.74	1.66	9.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

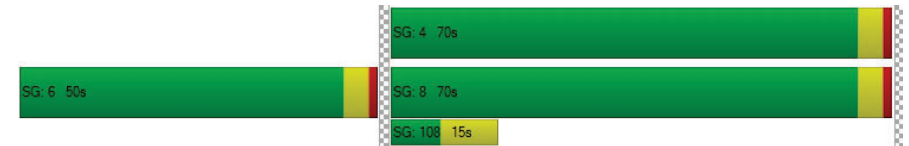
X, volume / capacity	0.18	0.48	0.93	0.88
d, Delay for Lane Group [s/veh]	10.26	13.38	41.75	49.10
Lane Group LOS	B	B	D	D
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.36	7.70	13.71	12.66
50th-Percentile Queue Length [ft/ln]	58.89	192.57	342.65	316.55
95th-Percentile Queue Length [veh/ln]	4.24	12.25	19.78	18.50
95th-Percentile Queue Length [ft/ln]	105.99	306.37	494.44	462.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.26	0.00	0.00	13.38	41.75	49.10
Movement LOS	B			B	D	D
d_A, Approach Delay [s/veh]	10.26		13.38		43.96	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]				28.12		
Intersection LOS				C		
Intersection V/C				0.580		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 26.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.554

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	20	320	230	340	1280	130	30	380	40	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-3	0	-2	-3	0	0	10	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	317	230	338	1277	130	30	390	40	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	81	59	94	357	36	9	117	12	0	0	0
Total Analysis Volume [veh/h]	20	324	235	378	1427	145	36	466	48	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	2	24	24	67	89	89	15	15	15
g / C, Green / Cycle	0.02	0.20	0.20	0.56	0.74	0.74	0.12	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.01	0.17	0.13	0.11	0.41	0.44	0.10	0.10	0.11
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1802	1883	1729	1633
c, Capacity [veh/h]	37	376	356	1976	1405	1333	235	215	204
d1, Uniform Delay [s]	58.14	46.49	44.35	12.86	6.93	7.20	51.27	51.25	51.42
k, delay calibration	0.04	0.26	0.10	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.43	12.92	1.97	0.02	1.61	1.92	3.02	3.21	3.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.86	0.66	0.19	0.56	0.59	0.84	0.83	0.86
d, Delay for Lane Group [s/veh]	62.57	59.41	46.32	12.88	8.54	9.12	54.29	54.46	55.41
Lane Group LOS	E	E	D	B	A	A	D	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.65	10.66	6.64	2.48	8.38	8.78	5.90	5.41	5.31
50th-Percentile Queue Length [ft/ln]	16.19	286.52	165.96	62.05	209.58	219.38	147.53	135.26	132.74
95th-Percentile Queue Length [veh/ln]	1.17	16.02	10.86	4.47	13.13	13.63	9.89	9.22	9.09
95th-Percentile Queue Length [ft/ln]	29.13	400.39	271.60	111.69	328.29	340.84	247.13	230.62	227.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	59.41	46.32	12.88	8.80	9.12	54.29	54.66	55.41	0.00	0.00	0.00
Movement LOS	E	E	D	B	A	A	D	D	E			
d_A, Approach Delay [s/veh]	54.21			9.62			54.70			0.00		
Approach LOS	D			A			D			A		
d_I, Intersection Delay [s/veh]	26.05											
Intersection LOS	C											
Intersection V/C	0.554											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 16.7
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.384

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	130	190	140	30	70	20	30	580	60	140	780	80
Base Volume Input [veh/h]	130	190	140	30	70	20	30	580	60	140	780	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	0	0	0	0	0	0	1	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	190	146	30	70	20	30	580	60	141	785	80
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	53	40	8	18	5	8	151	16	38	210	21
Total Analysis Volume [veh/h]	144	211	162	32	74	21	31	605	63	151	840	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	25	25	25	25	25	62	62	62	62	62	62
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.62	0.62	0.62	0.62	0.62	0.62
(v / s)_i Volume / Saturation Flow Rate	0.12	0.11	0.11	0.03	0.05	0.05	0.17	0.04	0.19	0.25	0.26
s, saturation flow rate [veh/h]	1163	1900	1450	1132	1737	611	3618	1424	811	1900	1753
c, Capacity [veh/h]	290	477	364	228	436	352	2231	878	489	1172	1081
d1, Uniform Delay [s]	37.57	31.47	31.49	38.14	29.59	15.48	8.80	7.67	14.45	9.74	9.91
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.24	0.32	0.10	0.09	0.49	0.30	0.16	1.63	1.03	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

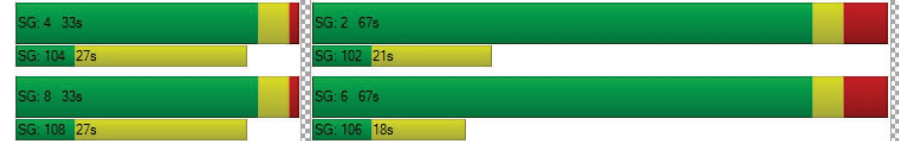
X, volume / capacity	0.50	0.44	0.44	0.14	0.22	0.09	0.27	0.07	0.31	0.40	0.42
d, Delay for Lane Group [s/veh]	38.06	31.71	31.81	38.24	29.69	15.97	9.10	7.83	16.08	10.77	11.11
Lane Group LOS	D	C	C	D	C	B	A	A	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.23	4.22	3.25	0.69	1.79	0.45	2.91	0.55	2.19	5.19	5.14
50th-Percentile Queue Length [ft/ln]	80.77	105.57	81.30	17.28	44.64	11.15	72.78	13.75	54.66	129.65	128.42
95th-Percentile Queue Length [veh/ln]	5.82	7.59	5.85	1.24	3.21	0.80	5.24	0.99	3.94	8.92	8.85
95th-Percentile Queue Length [ft/ln]	145.38	189.82	146.35	31.10	80.35	20.06	131.00	24.75	98.39	223.02	221.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.06	31.71	31.81	38.24	29.69	29.69	15.97	9.10	7.83	16.08	10.92	11.11
Movement LOS	D	C	C	D	C	C	B	A	A	B	B	B
d_A, Approach Delay [s/veh]	33.51			31.84			9.29			11.66		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	16.70											
Intersection LOS	B											
Intersection V/C	0.384											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 21.9
Level Of Service: C
Volume to Capacity (v/c): 0.440

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	120	390	80	60	130	40	30	190	30	40	280	70
Base Volume Input [veh/h]	120	390	80	60	130	40	30	190	30	40	280	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	6	0	0	0	1	0	-4	0	0	19	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	396	80	60	130	41	30	186	30	40	299	70
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	108	22	18	38	12	9	54	9	12	90	21
Total Analysis Volume [veh/h]	136	431	87	71	154	49	35	216	35	48	360	84
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No				No
Maximum Recall		No			No			No				No
Pedestrian Recall		No			No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	59	59	59	59	59	31	31
g / C, Green / Cycle	0.59	0.59	0.59	0.59	0.59	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.12	0.14	0.15	0.08	0.12	0.20	0.29
s, saturation flow rate [veh/h]	1146	1900	1718	884	1751	1398	1678
c, Capacity [veh/h]	666	1127	1019	516	1039	480	567
d1, Uniform Delay [s]	13.13	9.60	9.67	13.45	9.34	27.93	32.97
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.11	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.69	0.49	0.58	0.56	0.42	1.19	5.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

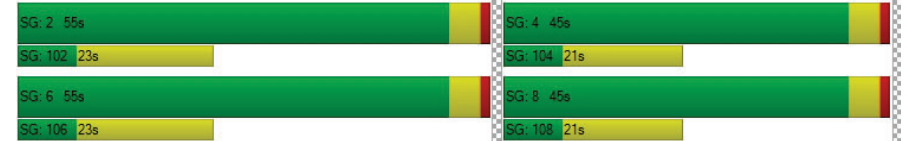
X, volume / capacity	0.20	0.24	0.25	0.14	0.20	0.60	0.87
d, Delay for Lane Group [s/veh]	13.82	10.09	10.25	14.01	9.76	29.11	38.59
Lane Group LOS	B	B	B	B	A	C	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.71	2.68	2.58	0.91	2.00	5.57	11.94
50th-Percentile Queue Length [ft/ln]	42.78	67.09	64.57	22.67	50.01	139.18	298.62
95th-Percentile Queue Length [veh/ln]	3.08	4.83	4.65	1.63	3.60	9.44	17.61
95th-Percentile Queue Length [ft/ln]	77.00	120.77	116.22	40.80	90.02	235.91	440.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.82	10.15	10.25	14.01	9.76	9.76	29.11	29.11	29.11	38.59	38.59	38.59
Movement LOS	B	B	B	B	A	A	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	10.93			10.86			29.11			38.59		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	21.94											
Intersection LOS	C											
Intersection V/C	0.440											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.1
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.399

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	100	430	40	100	130	50	30	400	30	40	370
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	6	22	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	433	40	100	130	50	36	422	30	40	380	82
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8552	0.8552	0.8552	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	123	11	28	37	14	11	123	9	12	119	26
Total Analysis Volume [veh/h]	114	494	46	113	147	56	42	493	35	50	475	102
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.10	0.14	0.15	0.13	0.12	0.05	0.14	0.14	0.06	0.25	0.07
s, saturation flow rate [veh/h]	1148	1900	1786	865	1708	926	1900	1809	862	1900	1401
c, Capacity [veh/h]	273	557	523	199	501	457	1092	1040	490	1092	805
d1, Uniform Delay [s]	37.75	29.18	29.36	41.88	28.35	17.90	10.50	10.55	14.10	12.04	9.74
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.25	0.29	0.95	0.20	0.40	0.53	0.58	0.42	1.26	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.49	0.51	0.57	0.41	0.09	0.24	0.25	0.10	0.43	0.13
d, Delay for Lane Group [s/veh]	38.13	29.43	29.65	42.83	28.55	18.29	11.03	11.13	14.52	13.30	10.06
Lane Group LOS	D	C	C	D	C	B	B	B	B	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.53	5.32	5.21	2.73	3.83	0.64	2.93	2.90	0.66	6.04	1.06
50th-Percentile Queue Length [ft/ln]	63.31	132.90	130.26	68.18	95.77	15.97	73.27	72.44	16.61	151.01	26.38
95th-Percentile Queue Length [veh/ln]	4.56	9.10	8.95	4.91	6.90	1.15	5.28	5.22	1.20	10.07	1.90
95th-Percentile Queue Length [ft/ln]	113.96	227.43	223.85	122.73	172.38	28.74	131.89	130.39	29.89	251.77	47.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.13	29.53	29.65	42.83	28.55	28.55	18.29	11.08	11.13	14.52	13.30	10.06
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	31.04			33.65			11.61			12.87		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	21.05											
Intersection LOS	C											
Intersection V/C	0.399											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 21.4
Level Of Service: C
Volume to Capacity (v/c): 0.404

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	Base Volume Input [veh/h]	80	543	60	0	90	100	110	370	30	30	390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	-2	0	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	543	60	0	90	100	110	368	30	30	387	70
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	142	16	0	25	28	29	98	8	8	107	19
Total Analysis Volume [veh/h]	84	570	63	0	100	111	117	392	32	33	428	77
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	23	23	23	23	23	68	68	68	68	68
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.68	0.68	0.68	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.18	0.00	0.13	0.12	0.23	0.03	0.23	0.05
s, saturation flow rate [veh/h]	1162	1900	1770	807	1612	959	1855	962	1900	1446
c, Capacity [veh/h]	186	440	410	112	373	609	1255	609	1285	978
d1, Uniform Delay [s]	43.86	35.54	35.82	0.00	33.97	11.03	6.79	10.11	6.76	5.53
k, delay calibration	0.04	0.04	0.06	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	0.89	1.54	0.00	0.50	0.70	0.73	0.17	0.70	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.73	0.76	0.00	0.57	0.19	0.34	0.05	0.33	0.08
d, Delay for Lane Group [s/veh]	44.50	36.42	37.36	0.00	34.47	11.73	7.52	10.28	7.46	5.69
Lane Group LOS	D	D	D	A	C	B	A	B	A	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.02	7.18	7.07	0.00	4.48	1.33	3.48	0.34	3.49	0.52
50th-Percentile Queue Length [ft/ln]	50.55	179.40	176.75	0.00	112.07	33.27	86.88	8.53	87.16	12.98
95th-Percentile Queue Length [veh/ln]	3.64	11.57	11.43	0.00	7.96	2.40	6.26	0.61	6.28	0.93
95th-Percentile Queue Length [ft/ln]	90.99	289.23	285.77	0.00	198.88	59.88	156.39	15.35	156.88	23.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.50	36.83	37.36	0.00	34.47	34.47	11.73	7.52	7.52	10.28	7.46	5.69
Movement LOS	D	D	D	A	C	C	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	37.78		34.47			8.43			7.38			
Approach LOS	D		C			A			A			
d_I, Intersection Delay [s/veh]	21.37											
Intersection LOS	C											
Intersection V/C	0.404											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 24.0
 Level Of Service: C
 Volume to Capacity (v/c): 0.428

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	610	80	40	10	80	0	0	0	6	250	50
Base Volume Input [veh/h]	14	610	80	40	10	80	0	0	0	6	250	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	613	80	40	10	80	0	0	0	6	250	50
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	169	22	12	3	24	0	0	0	2	83	17
Total Analysis Volume [veh/h]	15	674	88	47	12	94	0	0	0	6	331	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	40	40	5	49	40
g / C, Green / Cycle	0.40	0.40	0.05	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.19	0.07	0.03	0.07	0.22
s, saturation flow rate [veh/h]	3618	1344	1810	1578	1838
c, Capacity [veh/h]	1431	532	93	778	745
d1, Uniform Delay [s]	22.43	19.53	46.19	13.78	22.56
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	0.67	1.60	0.36	2.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

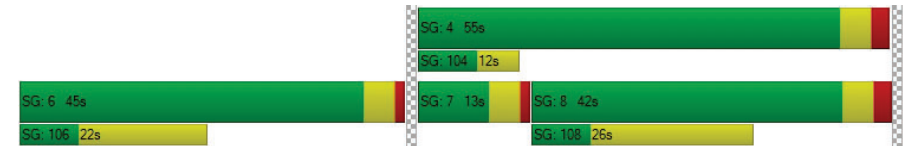
X, volume / capacity	0.47	0.17	0.51	0.14	0.53
d, Delay for Lane Group [s/veh]	23.54	20.20	47.79	14.14	25.28
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	5.97	1.41	1.16	1.32	7.48
50th-Percentile Queue Length [ft/ln]	149.25	35.15	29.06	33.10	186.89
95th-Percentile Queue Length [veh/ln]	9.98	2.53	2.09	2.38	11.96
95th-Percentile Queue Length [ft/ln]	249.43	63.27	52.32	59.58	298.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	23.54	20.20	47.79	14.14	14.14	0.00	0.00	0.00	0.00	25.28	25.28
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		23.15		24.48		0.00				25.28		
Approach LOS		C		C		A				C		
d_I, Intersection Delay [s/veh]		23.95										
Intersection LOS		C										
Intersection V/C		0.428										

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 20.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.469

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	20	200	60	40	120	30	30	260	100	60	280	40
Base Volume Input [veh/h]	20	200	60	40	120	30	30	260	100	60	280	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	0	-4	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	200	60	40	120	30	30	256	100	60	289	40
Peak Hour Factor	0.8796	0.8796	0.8796	0.8333	0.8333	0.8333	0.9034	0.9034	0.9034	0.8483	0.8483	0.8483
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	57	17	12	36	9	8	71	28	18	85	12
Total Analysis Volume [veh/h]	33	227	68	48	144	36	33	283	111	71	341	47
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	22	69	69	69
g / C, Green / Cycle	0.22	0.22	0.69	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.20	0.19	0.25	0.27	0.03
s, saturation flow rate [veh/h]	1618	1183	1730	1546	1574
c, Capacity [veh/h]	397	305	1227	1104	1081
d1, Uniform Delay [s]	37.68	35.92	6.42	6.25	5.05
k, delay calibration	0.11	0.09	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.57	2.94	0.78	0.97	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.83	0.75	0.35	0.37	0.04
d, Delay for Lane Group [s/veh]	42.25	38.85	7.20	7.22	5.12
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.11	5.36	3.40	3.24	0.29
50th-Percentile Queue Length [ft/ln]	202.64	134.06	84.95	80.96	7.34
95th-Percentile Queue Length [veh/ln]	12.77	9.16	6.12	5.83	0.53
95th-Percentile Queue Length [ft/ln]	319.36	229.01	152.91	145.72	13.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.25	42.25	42.25	38.85	38.85	38.85	7.20	7.20	7.20	7.22	7.22	5.12
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	42.25			38.85			7.20		7.20		7.00	
Approach LOS	D			D			A		A		A	
d_I, Intersection Delay [s/veh]	20.12											
Intersection LOS	C											
Intersection V/C	0.469											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.8
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.513

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	20	140	30	150	90	40	30	510	20	60	440	40
Base Volume Input [veh/h]	20	140	30	150	90	40	30	510	20	60	440	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	0	0	0	22	0	0	13	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	147	30	150	90	40	30	532	20	60	453	42
Peak Hour Factor	0.8437	0.8437	0.8437	0.7884	0.7884	0.7884	0.9314	0.9314	0.9314	0.9359	0.9359	0.9359
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	44	9	48	29	13	8	143	5	16	121	11
Total Analysis Volume [veh/h]	24	174	36	190	114	51	32	571	21	64	484	45
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	27	27	27	27	59	59	59	59	59	59
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.59	0.59	0.59	0.59	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.02	0.13	0.18	0.10	0.04	0.33	0.02	0.08	0.28	0.03
s, saturation flow rate [veh/h]	1090	1643	1059	1583	833	1710	1369	769	1710	1345
c, Capacity [veh/h]	258	451	229	434	413	1015	812	354	1015	798
d1, Uniform Delay [s]	35.15	30.16	43.79	29.36	18.08	12.38	8.38	21.85	11.50	8.53
k, delay calibration	0.04	0.04	0.13	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	0.28	8.80	0.20	0.36	2.25	0.06	1.12	1.61	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.47	0.83	0.38	0.08	0.56	0.03	0.18	0.48	0.06
d, Delay for Lane Group [s/veh]	35.20	30.44	52.59	29.57	18.45	14.64	8.44	22.97	13.11	8.67
Lane Group LOS	D	C	D	C	B	B	A	C	B	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	0.49	4.14	5.24	3.16	0.49	7.83	0.19	1.14	6.12	0.42
50th-Percentile Queue Length [ft/ln]	12.33	103.45	131.11	79.09	12.27	195.75	4.81	28.38	152.95	10.51
95th-Percentile Queue Length [veh/ln]	0.89	7.45	9.00	5.69	0.88	12.42	0.35	2.04	10.17	0.76
95th-Percentile Queue Length [ft/ln]	22.19	186.20	225.00	142.35	22.09	310.48	8.65	51.09	254.36	18.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.20	30.44	30.44	52.59	29.57	29.57	18.45	14.64	8.44	22.97	13.11	8.67
Movement LOS	D	C	C	D	C	C	B	B	A	C	B	A
d_A, Approach Delay [s/veh]	30.93			41.89			14.62			13.84		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	21.84											
Intersection LOS	C											
Intersection V/C	0.513											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.416

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	60	190	20	40	250	10	20	250	40	30	310	40
Base Volume Input [veh/h]	60	190	20	40	250	10	20	250	40	30	310	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	0	0	0	0	0	0	-4	0	0	10	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	190	20	40	250	10	20	246	40	30	320	40
Peak Hour Factor	0.9166	0.9166	0.9166	0.8625	0.8625	0.8625	0.8118	0.8118	0.8118	0.8521	0.8521	0.8521
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	52	5	12	72	3	6	76	12	9	94	12
Total Analysis Volume [veh/h]	64	207	22	46	290	12	25	303	49	35	376	47
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	25	25	25	25	65	65	65
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.65	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.06	0.12	0.04	0.16	0.18	0.03	0.26
s, saturation flow rate [veh/h]	1079	1855	1159	1875	1817	1571	1796
c, Capacity [veh/h]	160	471	211	476	1227	1027	1213
d1, Uniform Delay [s]	44.82	31.74	40.28	33.16	7.23	6.18	7.94
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.60	0.29	0.19	0.52	0.53	0.09	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.49	0.22	0.63	0.27	0.05	0.38
d, Delay for Lane Group [s/veh]	45.42	32.02	40.47	33.68	7.77	6.26	8.84
Lane Group LOS	D	C	D	C	A	A	A
Critical Lane Group	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.58	4.76	1.05	6.58	2.75	0.35	4.24
50th-Percentile Queue Length [ft/ln]	39.56	119.00	26.37	164.39	68.83	8.83	106.07
95th-Percentile Queue Length [veh/ln]	2.85	8.34	1.90	10.78	4.96	0.64	7.62
95th-Percentile Queue Length [ft/ln]	71.20	208.45	47.47	269.53	123.89	15.89	190.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.42	32.02	32.02	40.47	33.68	33.68	7.77	7.77	6.26	8.84	8.84	8.84
Movement LOS	D	C	C	D	C	C	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	34.95			34.58			7.57			8.84		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	19.77											
Intersection LOS	B											
Intersection V/C	0.416											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 19.0
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.425

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	30	190	20	130	120	50	20	610	40	30	490
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	22	0	-2	15	-1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	190	20	130	120	50	20	632	40	28	505	69
Peak Hour Factor	0.8983	0.8983	0.8983	0.7948	0.7948	0.7948	0.9768	0.9768	0.9768	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	53	6	41	38	16	5	162	10	7	134	18
Total Analysis Volume [veh/h]	33	212	22	164	151	63	20	647	41	30	537	73
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.14	0.12	0.02	0.18	0.18	0.04	0.28	0.05
s, saturation flow rate [veh/h]	1174	1861	1156	1781	880	1900	1849	763	1900	1548
c, Capacity [veh/h]	261	526	252	503	428	1112	1082	433	1112	906
d1, Uniform Delay [s]	36.18	29.41	41.49	29.23	18.10	10.50	10.52	14.42	11.96	9.01
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.22	1.06	0.21	0.21	0.73	0.76	0.31	1.50	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.45	0.65	0.43	0.05	0.31	0.31	0.07	0.48	0.08
d, Delay for Lane Group [s/veh]	36.26	29.63	42.55	29.44	18.31	11.24	11.28	14.73	13.46	9.18
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.71	4.65	4.04	4.22	0.30	3.90	3.84	0.40	6.93	0.71
50th-Percentile Queue Length [ft/ln]	17.64	116.16	101.03	105.58	7.60	97.52	96.97	10.11	173.36	17.65
95th-Percentile Queue Length [veh/ln]	1.27	8.18	7.27	7.59	0.55	7.02	6.91	0.73	11.25	1.27
95th-Percentile Queue Length [ft/ln]	31.76	204.54	181.86	189.84	13.68	175.53	172.75	18.19	281.33	31.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.26	29.63	29.63	42.55	29.44	29.44	18.31	11.26	11.28	14.73	13.46	9.18
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	30.45			35.13			11.46			13.04		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	19.00											
Intersection LOS	B											
Intersection V/C	0.425											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 21.2
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.440

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	200	380	270	40	190	40	20	600	130	140	770	40
Base Volume Input [veh/h]	200	380	270	40	190	40	20	600	130	140	770	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	7	-1	4	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	380	270	40	190	40	20	607	129	144	776	40
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	101	71	12	59	12	5	159	34	38	207	11
Total Analysis Volume [veh/h]	212	402	286	50	236	50	21	636	135	153	827	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1.8						2.3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.16	0.21	0.19	0.05	0.08	0.08	0.03	0.18	0.09	0.16	0.23	0.03
s, saturation flow rate [veh/h]	1309	1900	1525	983	1900	1752	663	3618	1487	977	3618	1443
c, Capacity [veh/h]	494	670	538	108	442	408	264	1592	654	555	2008	801
d1, Uniform Delay [s]	24.01	26.56	25.77	48.68	31.88	32.00	26.05	19.03	17.25	11.67	12.83	10.20
k, delay calibration	0.43	0.09	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.40	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.32	0.74	0.30	1.15	0.16	0.19	0.59	0.75	0.71	0.98	0.63	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.60	0.53	0.46	0.33	0.34	0.08	0.40	0.21	0.28	0.41	0.05
d, Delay for Lane Group [s/veh]	26.33	27.30	26.08	49.83	32.04	32.19	26.63	19.78	17.96	12.66	13.46	10.33
Lane Group LOS	C	C	C	D	C	C	C	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.94	7.83	5.35	1.27	2.89	2.80	0.41	5.06	2.01	1.70	5.14	0.44
50th-Percentile Queue Length [ft/ln]	98.49	195.66	133.83	31.70	72.15	69.97	10.22	126.50	50.33	42.48	128.48	10.97
95th-Percentile Queue Length [veh/ln]	7.09	12.41	9.15	2.28	5.19	5.04	0.74	8.75	3.62	3.06	8.86	0.79
95th-Percentile Queue Length [ft/ln]	177.27	310.36	228.70	57.05	129.87	125.95	18.39	218.73	90.59	76.46	221.42	19.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.33	27.30	26.08	49.83	32.10	32.19	26.63	19.78	17.96	12.66	13.46	10.33
Movement LOS	C	C	C	D	C	C	C	B	B	B	B	B
d_A, Approach Delay [s/veh]	26.68		34.75			19.65		13.20				
Approach LOS	C		C			B		B				
d_I, Intersection Delay [s/veh]	21.23											
Intersection LOS	C											
Intersection V/C	0.440											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized Delay (sec / veh): 58.5
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.896

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	150	810	60	20	470	40	10	150	130	60	190	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	-1	4	0	-3	-1	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	810	60	20	469	44	10	147	129	60	190	50
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	213	16	6	139	13	3	39	34	16	52	14
Total Analysis Volume [veh/h]	165	854	63	24	555	52	11	156	137	66	208	55
Presence of On-Street Parking	No		No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	55	55	63	52	52	27	27	27	27
g / C, Green / Cycle	0.63	0.55	0.55	0.63	0.52	0.52	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.17	0.24	0.25	0.03	0.16	0.16	0.15	0.09	0.64	0.04
s, saturation flow rate [veh/h]	974	1900	1835	732	1900	1823	1134	1461	426	1508
c, Capacity [veh/h]	650	1054	1018	483	987	947	348	399	161	411
d1, Uniform Delay [s]	7.86	13.12	13.17	7.84	13.77	13.81	29.59	29.16	33.39	27.42
k, delay calibration	0.46	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.87	1.34	1.41	0.19	0.82	0.88	0.38	0.19	341.82	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.44	0.45	0.05	0.31	0.32	0.48	0.34	1.70	0.13
d, Delay for Lane Group [s/veh]	8.74	14.46	14.58	8.04	14.59	14.68	29.97	29.35	375.22	27.48
Lane Group LOS	A	B	B	A	B	B	C	C	F	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.48	6.22	6.11	0.20	4.07	3.98	3.16	2.60	18.27	0.98
50th-Percentile Queue Length [ft/ln]	36.92	155.50	152.75	5.07	101.69	99.58	79.05	65.03	456.70	24.51
95th-Percentile Queue Length [veh/ln]	2.66	10.31	10.16	0.37	7.32	7.17	5.69	4.68	31.35	1.76
95th-Percentile Queue Length [ft/ln]	66.46	257.75	254.10	9.13	183.04	179.24	142.28	117.05	783.86	44.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.74	14.51	14.58	8.04	14.63	14.68	29.97	29.97	29.35	375.22	375.22	27.48
Movement LOS	A	B	B	A	B	B	C	C	C	F	F	C
d_A, Approach Delay [s/veh]	13.63			14.38			29.69			317.08		
Approach LOS	B			B			C			F		
d_I, Intersection Delay [s/veh]	58.47											
Intersection LOS	E											
Intersection V/C	0.896											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 36.8
 Level Of Service: D
 Volume to Capacity (v/c): 0.619

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	120	850	160	90	540	60	20	520	250	80	400	180
Base Volume Input [veh/h]	120	850	160	90	540	60	20	520	250	80	400	180
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-2	7	0	-1	-1	0	0	13	9	0	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	857	160	89	539	60	20	533	259	80	414	180
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	220	41	24	143	16	6	148	72	22	114	50
Total Analysis Volume [veh/h]	121	881	165	94	570	63	22	593	288	88	456	198
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	0.00	2.60	2.60	0.00
g_i, Effective Green Time [s]	54	43	43	54	43	43	25	25	25	36	36	36
g / C, Green / Cycle	0.54	0.43	0.43	0.54	0.43	0.43	0.25	0.25	0.25	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.12	0.28	0.29	0.12	0.17	0.17	0.02	0.25	0.27	0.09	0.24	0.14
s, saturation flow rate [veh/h]	979	1900	1762	759	1900	1807	950	1900	1561	931	1900	1453
c, Capacity [veh/h]	549	825	765	397	821	780	99	480	394	285	689	527
d1, Uniform Delay [s]	11.86	22.30	22.50	14.04	19.43	19.50	48.36	37.01	37.38	24.89	26.73	23.52
k, delay calibration	0.23	0.50	0.50	0.50	0.50	0.50	0.04	0.27	0.33	0.07	0.15	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	3.96	4.54	1.40	1.41	1.52	0.42	23.99	51.62	0.42	1.48	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

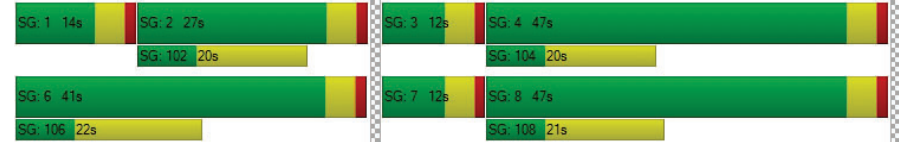
X, volume / capacity	0.22	0.65	0.67	0.24	0.39	0.40	0.22	0.97	1.05	0.31	0.66	0.38
d, Delay for Lane Group [s/veh]	12.28	26.27	27.04	15.44	20.84	21.02	48.78	61.00	89.00	25.31	28.21	23.69
Lane Group LOS	B	C	C	B	C	C	D	E	F	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.33	10.52	10.16	1.12	5.32	5.19	0.55	14.22	15.08	1.40	9.17	3.42
50th-Percentile Queue Length [ft/ln]	33.25	283.06	253.97	28.06	133.07	129.69	13.86	355.46	376.89	35.07	229.17	85.46
95th-Percentile Queue Length [veh/ln]	2.39	15.84	15.39	2.02	9.11	8.92	1.00	20.40	22.10	2.52	14.13	6.15
95th-Percentile Queue Length [ft/ln]	59.84	396.06	384.65	50.51	227.67	223.07	24.94	510.06	552.40	63.12	353.31	153.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.28	26.57	27.04	15.44	20.92	21.02	48.78	67.01	89.00	25.31	28.21	23.69
Movement LOS	B	C	C	B	C	C	D	E	F	C	C	C
d_A, Approach Delay [s/veh]	25.15			20.22			73.58			26.66		
Approach LOS	C			C			E			C		
d_I, Intersection Delay [s/veh]	36.81											
Intersection LOS	D											
Intersection V/C	0.619											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 33.7
Level Of Service: C
Volume to Capacity (v/c): 0.587

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	140	1000	150	60	810	30	70	250	120	120	280	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	5	0	0	8	0	0	0	-2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	1005	150	60	818	30	70	250	118	120	280	80
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	272	41	16	222	8	18	65	31	32	76	22
Total Analysis Volume [veh/h]	151	1090	163	65	890	33	72	259	122	129	302	86
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	10	51	51	37	37	37	26	26	26	35	35
g / C, Green / Cycle	0.10	0.51	0.51	0.37	0.37	0.37	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.08	0.34	0.35	0.14	0.24	0.25	0.07	0.14	0.09	0.32	0.06
s, saturation flow rate [veh/h]	1810	1900	1734	450	1900	1851	1094	1900	1352	1330	1366
c, Capacity [veh/h]	182	978	893	110	700	682	72	488	347	461	482
d1, Uniform Delay [s]	44.13	17.71	18.22	47.59	26.40	26.52	50.00	31.97	30.35	30.57	22.33
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.68	3.38	4.32	21.47	4.91	5.24	28.67	0.33	0.23	28.49	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

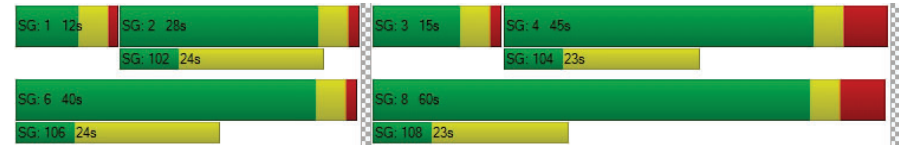
X, volume / capacity	0.83	0.65	0.69	0.59	0.66	0.67	0.99	0.53	0.35	0.94	0.18
d, Delay for Lane Group [s/veh]	47.81	21.08	22.55	69.06	31.31	31.76	78.67	32.30	30.58	59.05	22.40
Lane Group LOS	D	C	C	E	C	C	E	C	C	E	C
Critical Lane Group	No	No	Yes	No	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.83	11.10	11.17	2.27	9.97	9.94	2.35	5.30	2.37	11.96	1.37
50th-Percentile Queue Length [ft/ln]	95.68	277.51	279.30	56.78	249.28	248.38	58.82	132.46	59.27	299.03	34.29
95th-Percentile Queue Length [veh/ln]	6.89	16.56	16.65	4.09	15.15	15.10	4.23	9.07	4.27	17.63	2.47
95th-Percentile Queue Length [ft/ln]	172.23	414.11	416.34	102.21	378.75	377.61	105.87	226.84	106.69	440.83	61.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.81	21.69	22.55	69.06	31.52	31.76	78.67	32.30	30.58	59.05	59.05	22.40
Movement LOS	D	C	C	E	C	C	E	C	C	E	E	C
d_A, Approach Delay [s/veh]	24.60			34.00			39.21			52.96		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.69											
Intersection LOS	C											
Intersection V/C	0.587											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 49.8
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.545

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
Base Volume Input [veh/h]	170	1240	50	40	920	30	6	80	140	66	150	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	4	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	177	1244	50	40	926	30	6	80	140	66	150	90
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	328	13	10	241	8	2	24	41	18	42	25
Total Analysis Volume [veh/h]	187	1312	53	42	965	31	7	95	165	70	169	101
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			Yes			Yes	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	91	91	91	91	91	91	91	91
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	11	33	33	5	26	26	40	40
g / C, Green / Cycle	0.12	0.36	0.36	0.05	0.29	0.29	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.10	0.36	0.37	0.02	0.26	0.27	0.16	0.15
s, saturation flow rate [veh/h]	1810	1900	1860	1810	1900	1864	1662	1764
c, Capacity [veh/h]	223	684	670	93	547	537	728	772
d1, Uniform Delay [s]	39.16	29.24	29.24	42.11	31.46	31.55	17.13	17.06
k, delay calibration	0.07	0.50	0.50	0.04	0.26	0.27	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.68	34.90	38.40	1.28	13.61	14.87	1.37	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

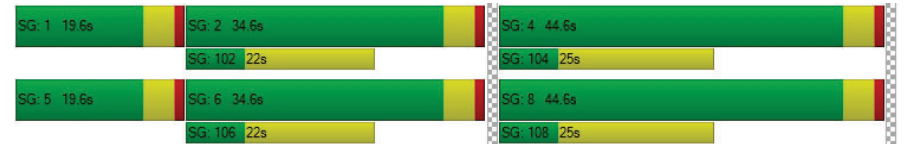
X, volume / capacity	0.84	1.00	1.01	0.45	0.92	0.92	0.36	0.35
d, Delay for Lane Group [s/veh]	44.84	64.15	67.64	43.39	45.07	46.43	18.50	18.31
Lane Group LOS	D	F	F	D	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.39	20.90	21.12	0.94	12.39	12.46	3.78	3.89
50th-Percentile Queue Length [ft/ln]	109.71	522.60	527.96	23.60	309.79	311.46	94.49	97.27
95th-Percentile Queue Length [veh/ln]	7.82	28.44	28.94	1.70	18.16	18.25	6.80	7.00
95th-Percentile Queue Length [ft/ln]	195.60	711.06	723.58	42.48	454.11	456.17	170.08	175.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	44.84	65.81	67.64	43.39	45.73	46.43	0.00	18.50	18.50	0.00	18.31	18.31
Movement LOS	D	E	E	D	D	D		B	B		B	B
d_A, Approach Delay [s/veh]	63.35			45.65			18.50			18.31		
Approach LOS	E			D			B			B		
d_I, Intersection Delay [s/veh]	49.83											
Intersection LOS	D											
Intersection V/C	0.545											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized Delay (sec / veh): 43.7
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.764

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	280	710	0	1230	40	0	0	0	0	640	280
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	720	0	1236	40	0	0	0	0	640	280	880
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	207	0	325	11	0	0	0	0	176	77	242
Total Analysis Volume [veh/h]	322	827	0	1302	42	0	0	0	0	704	308	968
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.25	0.24	0.28	0.27	0.34	0.31
s, saturation flow rate [veh/h]	1810	3618	3618	1865	1810	1864	1432	1573
c, Capacity [veh/h]	337	2123	1310	675	609	627	482	529
d1, Uniform Delay [s]	48.26	13.26	32.42	32.10	36.65	36.22	39.78	38.12
k, delay calibration	0.37	0.50	0.50	0.50	0.30	0.28	0.45	0.37
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	31.95	0.54	2.92	5.08	7.89	6.17	40.01	18.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.39	0.68	0.66	0.83	0.81	1.00	0.91
d, Delay for Lane Group [s/veh]	80.22	13.80	35.34	37.18	44.54	42.39	79.79	56.35
Lane Group LOS	F	B	D	D	D	D	F	E
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.48	5.99	11.47	11.79	14.37	13.94	18.81	15.64
50th-Percentile Queue Length [ft/ln]	312.00	149.83	286.83	294.70	359.2	348.4	470.1	390.9
95th-Percentile Queue Length [veh/ln]	18.27	10.01	17.03	17.42	20.59	20.06	26.01	22.13
95th-Percentile Queue Length [ft/ln]	456.84	250.20	425.71	435.47	514.6	501.5	650.1	553.1

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.22	13.80	0.00	0.00	35.91	37.18	0.00	0.00	0.00	43.90	42.39	67.80
Movement LOS	F	B			D	D				D	D	E
d_A, Approach Delay [s/veh]	32.42		35.95			0.00		55.49				
Approach LOS	C		D			A		E				
d_I, Intersection Delay [s/veh]	43.69											
Intersection LOS	D											
Intersection V/C	0.764											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 30.0
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.570

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	800	320	560	1300	0	200	170	250	0	0	0	0
Base Volume Input [veh/h]	0	800	320	560	1300	0	200	170	250	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	-2	8	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	810	320	558	1308	0	200	170	250	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	225	89	150	351	0	57	49	72	0	0	0
Total Analysis Volume [veh/h]	0	899	355	599	1404	0	229	195	287	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	28	28	28	54	87	24	24	24
g / C, Green / Cycle	0.24	0.24	0.24	0.45	0.73	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.17	0.21	0.21	0.17	0.39	0.13	0.11	0.18
s, saturation flow rate [veh/h]	3618	1517	1465	3514	3618	1810	1729	1577
c, Capacity [veh/h]	855	359	346	1586	2627	357	341	311
d1, Uniform Delay [s]	42.29	44.07	44.48	21.76	7.35	44.25	43.57	47.25
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.20
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	2.67	3.67	0.69	0.78	0.72	0.56	17.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.87	0.91	0.38	0.53	0.64	0.57	0.92
d, Delay for Lane Group [s/veh]	42.75	46.73	48.15	22.45	8.13	44.97	44.13	65.14
Lane Group LOS	D	D	D	C	A	D	D	E
Critical Lane Group	No	No	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.52	9.09	9.26	5.71	7.45	6.27	5.25	9.84
50th-Percentile Queue Length [ft/ln]	213.07	227.23	231.48	142.86	186.29	156.73	131.23	245.98
95th-Percentile Queue Length [veh/ln]	13.31	14.03	14.25	9.63	11.93	10.38	9.01	14.98
95th-Percentile Queue Length [ft/ln]	332.77	350.84	356.24	240.86	298.20	259.39	225.16	374.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	43.03	47.98	22.45	8.13	0.00	44.97	44.13	65.14	0.00	0.00	0.00
Movement LOS		D	D	C	A		D	D	E			
d_A, Approach Delay [s/veh]		45.10		12.42			52.88			0.00		
Approach LOS		D		B			D			A		
d_I, Intersection Delay [s/veh]		29.99										
Intersection LOS		C										
Intersection V/C		0.570										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 60.5
Level Of Service: E
Volume to Capacity (v/c): 0.639

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
Base Volume Input [veh/h]	750	330	150	780	150	220
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	-2	0	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	779	328	150	782	150	220
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	217	92	47	245	43	63
Total Analysis Volume [veh/h]	870	366	188	981	172	253
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
12, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.24	0.27	0.29	0.27	0.21	0.34
s, saturation flow rate [veh/h]	3618	1353	639	3618	832	734
c, Capacity [veh/h]	2509	938	438	2509	145	128
d1, Uniform Delay [s]	6.18	6.44	12.87	6.45	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.16	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	1.22	3.05	0.46	103.63	465.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.39	0.43	0.39	1.18	1.97
d, Delay for Lane Group [s/veh]	6.57	7.66	15.92	6.91	144.90	506.45
Lane Group LOS	A	A	B	A	F	F
Critical Lane Group	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.35	3.14	2.75	3.94	7.67	19.64
50th-Percentile Queue Length [ft/ln]	83.82	78.49	68.87	98.61	191.75	490.95
95th-Percentile Queue Length [veh/ln]	6.04	5.65	4.96	7.10	13.11	33.30
95th-Percentile Queue Length [ft/ln]	150.88	141.28	123.97	177.49	327.72	832.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.57	7.66	15.92	6.91	144.90	506.45
Movement LOS	A	A	B	A	F	F
d_A, Approach Delay [s/veh]	6.89		8.35		360.13	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	60.54					
Intersection LOS	E					
Intersection V/C	0.639					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 18.4
Level Of Service: B
Volume to Capacity (v/c): 0.420

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	10	290	110	170	330	20	30	60	10	120	30	30
Base Volume Input [veh/h]	10	290	110	170	330	20	30	60	10	120	30	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	9	18	0	0	1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	294	110	179	348	20	30	61	10	120	30	30
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	83	31	50	98	6	8	16	3	35	9	9
Total Analysis Volume [veh/h]	11	330	124	201	391	22	31	64	10	141	35	35
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	51	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.56	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.26	0.19	0.22	0.03	0.04	0.11	0.05
s, saturation flow rate [veh/h]	1045	1748	1071	1867	1039	1812	1289	1373
c, Capacity [veh/h]	648	905	632	1048	202	331	243	251
d1, Uniform Delay [s]	7.06	14.17	8.66	11.11	36.15	31.37	38.58	31.71
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	1.99	1.32	1.11	0.13	0.13	0.82	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

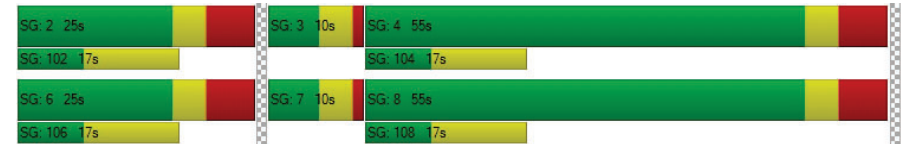
X, volume / capacity	0.02	0.50	0.32	0.39	0.15	0.22	0.58	0.28
d, Delay for Lane Group [s/veh]	7.06	16.15	9.98	12.23	36.28	31.50	39.40	31.93
Lane Group LOS	A	B	A	B	D	C	D	C
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.07	6.00	1.69	4.60	0.62	1.37	3.02	1.29
50th-Percentile Queue Length [ft/ln]	1.74	150.11	42.28	115.11	15.51	34.16	75.54	32.36
95th-Percentile Queue Length [veh/ln]	0.13	10.02	3.04	8.12	1.12	2.46	5.44	2.33
95th-Percentile Queue Length [ft/ln]	3.13	250.58	76.10	203.08	27.92	61.49	135.97	58.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.06	16.15	16.15	9.98	12.23	12.23	36.28	31.50	31.50	39.40	31.93	31.93
Movement LOS	A	B	B	A	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.94			11.49			32.91			36.92		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	18.43											
Intersection LOS	B											
Intersection V/C	0.420											

Sequence

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



Intersection Level Of Service Report

Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 16.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.585

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Northbound				Southbound				Eastbound				Westbound				
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
	Base Volume Input [veh/h]	40	0	950	140	270	1410	0	32	1085	209	90	0	120	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	17	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	0	967	140	271	1411	0	32	1085	209	90	0	120	0	0	0	0
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	1.0000	0.8012	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	0	259	38	75	389	0	8	271	52	28	0	37	0	0	0	0
Total Analysis Volume [veh/h]	40	0	1038	150	299	1556	0	32	1085	209	112	0	150	0	0	0	0
Presence of On-Street Parking	No			No	No	No	No				No	No	No				
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0
Rest in Walk		No				No					No		
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No		
Maximum Recall	No		No		No	No					No		
Pedestrian Recall	No		No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	4	104	104	117	108	23	23
g / C, Green / Cycle	0.03	0.69	0.69	0.78	0.72	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.29	0.09	0.44	0.43	0.09	0.13
s, saturation flow rate [veh/h]	1810	3618	1584	674	3618	1231	1132
c, Capacity [veh/h]	52	2509	1099	529	2615	192	177
d1, Uniform Delay [s]	72.29	9.88	7.78	6.92	10.09	58.69	61.51
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.14
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.52	0.51	0.26	4.34	1.01	1.04	13.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.41	0.14	0.57	0.59	0.58	0.85
d, Delay for Lane Group [s/veh]	80.81	10.38	8.04	11.25	11.10	59.74	74.88
Lane Group LOS	F	B	A	B	B	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.66	7.36	1.71	2.85	12.17	4.03	6.24
50th-Percentile Queue Length [ft/ln]	41.50	184.05	42.87	71.20	304.30	100.77	155.89
95th-Percentile Queue Length [veh/ln]	2.99	11.81	3.09	5.13	17.89	7.26	10.33
95th-Percentile Queue Length [ft/ln]	74.70	295.30	77.17	128.15	447.34	181.38	258.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	80.81	0.00	10.38	8.04	11.25	11.10	0.00	0.00	0.00	0.00	59.74	0.00	74.88
Movement LOS	F		B	A	B	B					E		E
d_A, Approach Delay [s/veh]	12.39		11.12		0.00		68.40						
Approach LOS	B		B		A		E						
d_I, Intersection Delay [s/veh]	16.07												
Intersection LOS	B												
Intersection V/C	0.585												

Sequence

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



Intersection Level Of Service Report

Intersection 1: PALISADES BEACH ROAD/CALIFORNIA AVENUE

Control Type: Signalized Delay (sec / veh): 53.8
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.245

Intersection Setup

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			+			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Pa-Ca			Pa-Ca			California Incline			California Incline		
	30	2130	2	380	2670	20	20	30	30	80	20	450
Base Volume Input [veh/h]	30	2130	2	380	2670	20	20	30	30	80	20	450
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	4	0	0	0	0	0	6	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	2130	2	384	2670	20	20	30	30	86	20	454
Peak Hour Factor	0.8617	0.8617	1.0000	0.9777	0.9777	0.9777	0.6250	0.6250	0.6250	0.8304	0.8304	0.8304
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	618	1	98	683	5	8	12	12	26	6	137
Total Analysis Volume [veh/h]	35	2472	2	393	2731	20	32	48	48	104	24	547
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap
Signal Group	3	8	0	7	4	0	5	5	0	0	1	1	
Auxiliary Signal Groups													1.7
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	-	-	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	0	7	7	
Maximum Green [s]	20	200	0	70	200	0	45	45	0	0	45	45	
Amber [s]	3.2	4.3	0.0	3.2	4.3	0.0	3.2	3.2	0.0	0.0	3.2	3.2	
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
Walk [s]	0	7	0	0	5	0	7	7	0	0	7	7	
Pedestrian Clearance [s]	0	10	0	0	13	0	10	10	0	0	10	10	
Rest in Walk	No	No		No	No		No	No		No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	
I2, Clearance Lost Time [s]	2.2	4.3	0.0	2.2	4.3	0.0	2.2	2.2	0.0	0.0	2.2	2.2	
Minimum Recall	No	Yes		No	Yes		No	No		No	No	No	
Maximum Recall	No	No		No	No		No	No		No	No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C	C	R
C, Cycle Length [s]	213	213	213	213	213	213	213	213
L, Total Lost Time per Cycle [s]	4.20	6.30	4.20	6.30	6.30	4.20	4.20	4.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.20	4.30	2.20	4.30	4.30	2.20	2.20	0.00
g_i, Effective Green Time [s]	6	103	50	147	147	45	45	100
g / C, Green / Cycle	0.03	0.48	0.24	0.69	0.69	0.21	0.21	0.47
(v / s)_i Volume / Saturation Flow Rate	0.02	0.48	0.22	0.50	0.50	0.55	0.23	0.34
s, saturation flow rate [veh/h]	1774	5176	1810	3618	1893	233	556	1615
c, Capacity [veh/h]	51	2499	428	2499	1307	70	148	755
d1, Uniform Delay [s]	102.40	54.47	79.22	20.30	20.38	77.04	85.24	45.58
k, delay calibration	0.04	0.04	0.17	0.04	0.06	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	3.18	12.00	0.15	0.43	418.98	44.47	5.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

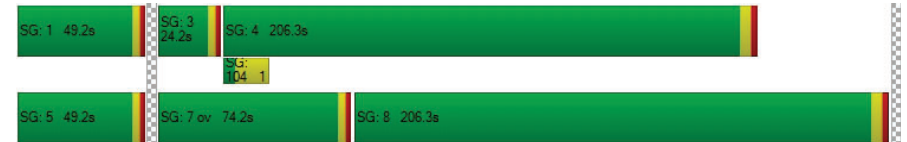
X, volume / capacity	0.69	0.99	0.92	0.72	0.72	1.82	0.86	0.72
d, Delay for Lane Group [s/veh]	108.32	57.66	91.22	20.45	20.81	496.02	129.71	51.55
Lane Group LOS	F	E	F	C	C	F	F	D
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.01	43.33	22.28	26.52	28.07	12.14	9.06	25.06
50th-Percentile Queue Length [ft/ln]	50.15	1083.32	557.11	663.10	701.67	303.48	226.40	626.56
95th-Percentile Queue Length [veh/ln]	3.61	54.13	30.03	34.97	36.76	21.81	13.99	33.27
95th-Percentile Queue Length [ft/ln]	90.27	1353.21	750.65	874.26	918.88	545.31	349.78	831.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	108.32	57.66	0.00	91.22	20.57	20.81	496.02	496.02	496.02	129.71	129.71	51.55
Movement LOS	F	E		F	C	C	F	F	F	F	F	D
d_A, Approach Delay [s/veh]	58.37		29.40		496.02		66.37					
Approach LOS	E		C		F		E					
d_I, Intersection Delay [s/veh]	53.77											
Intersection LOS	D											
Intersection V/C	1.245											

Sequence

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



Intersection Level Of Service Report
Intersection 2: OCEAN AVENUE/CALIFORNIA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 236.4
Level Of Service: F
Volume to Capacity (v/c): 1.960

Intersection Setup

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	Northbound			Southbound			Eastbound			Westbound			
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			25.00			35.00			
Grade [%]	0.00			0.00			0.00			0.00			
Crosswalk	Yes			Yes			Yes			Yes			

Volumes

Name	Ocean Ave			Ocean Ave			California Incline			California Ave			
	390	500	90	40	420	110	100	100	230	0	40	160	90
Base Volume Input [veh/h]	390	500	90	40	420	110	100	100	230	0	40	160	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	7	0	0	8	0	0	0	4	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	400	507	90	40	428	110	100	100	234	0	40	160	90
Peak Hour Factor	0.9383	0.9383	0.9383	0.8742	0.8742	0.8742	0.9127	0.9127	0.9127	1.0000	0.795	0.795	0.795
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	135	24	11	122	31	27	27	64	0	13	50	28
Total Analysis Volume [veh/h]	426	540	96	46	490	126	110	110	256	0	50	201	113
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	41			136			112			255			
Bicycle Volume [bicycles/h]	12			64			28			69			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Overlap	Permi	Permi	Permi	Permi
Signal Group	3	8	8	7	4	4	2	2	3	0	6	6	6
Auxiliary Signal Groups			8						2,3				
Lead / Lag	Lag	-	-	Lead	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	5	7	7	5	7	7	7	7	5	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	15	0	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	1.0	1.0	1.0	1.0	1.0	5.0	0.0	1.0	1.0	1.0
Split [s]	19	67	67	10	58	58	23	23	19	0	23	23	23
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	0	0	7	7	7
Pedestrian Clearance [s]	0	16	16	0	16	16	16	16	0	0	16	16	16
Rest in Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	2.6	2.6	2.6	2.6	2.6	6.6	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No	No			No	
Maximum Recall	No	No		No	No			No	No			No	
Pedestrian Recall	No	No		No	No			No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	60	60	4	53	53	18	37	18	18
g / C, Green / Cycle	0.10	0.60	0.60	0.04	0.53	0.53	0.18	0.37	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.24	0.28	0.08	0.03	0.26	0.09	1.47	0.17	0.54	0.13
s, saturation flow rate [veh/h]	1810	1900	1264	1810	1900	1352	150	1518	462	860
c, Capacity [veh/h]	189	1142	760	65	1012	720	82	570	129	159
d1, Uniform Delay [s]	44.75	11.11	8.60	47.68	14.72	12.05	46.83	23.44	39.32	38.21
k, delay calibration	0.50	0.50	0.50	0.04	0.50	0.50	0.50	0.06	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	581.20	1.40	0.34	5.28	1.66	0.53	794.09	0.29	455.22	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

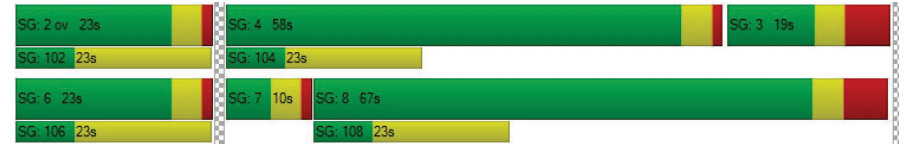
X, volume / capacity	2.25	0.47	0.13	0.71	0.48	0.18	2.69	0.45	1.95	0.71
d, Delay for Lane Group [s/veh]	625.95	12.51	8.95	52.96	16.38	12.58	840.92	23.73	494.54	40.40
Lane Group LOS	F	B	A	D	B	B	F	C	F	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	35.14	6.62	0.92	1.22	7.12	1.51	20.09	4.57	19.43	2.64
50th-Percentile Queue Length [ft/ln]	878.61	165.44	23.06	30.56	178.01	37.66	502.33	114.33	485.86	65.96
95th-Percentile Queue Length [veh/ln]	55.21	10.84	1.66	2.20	11.50	2.71	34.95	8.08	33.06	4.75
95th-Percentile Queue Length [ft/ln]	1380.23	270.91	41.50	55.01	287.42	67.78	873.80	202.01	826.53	118.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	625.95	12.51	8.95	52.96	16.38	12.58	840.92	840.92	23.73	494.5	494.5	494.5	40.40
Movement LOS	F	B	A	D	B	B	F	F	C	F	F	F	D
d_A, Approach Delay [s/veh]	258.26			18.20			401.42			353.56			
Approach LOS	F			B			F			F			
d_I, Intersection Delay [s/veh]	236.38												
Intersection LOS	F												
Intersection V/C	1.960												

Sequence

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



Intersection Level Of Service Report
Intersection 3: OCEAN AVENUE/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	63.8
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.453

Intersection Setup

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Wilshire Blvd	
Base Volume Input [veh/h]	580	200	80	660	340	390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	6	0	12	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	597	206	80	672	340	390
Peak Hour Factor	0.9243	0.9243	0.9478	0.9478	0.8686	0.8686
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	56	21	177	98	112
Total Analysis Volume [veh/h]	646	223	84	709	391	449
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	164		254		306	
Bicycle Volume [bicycles/h]	9		2		14	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	20	30	25	20
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	64	64	14	78	22	14
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	19	19	0	0	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	58	58	69	69	17	17	17
g / C, Green / Cycle	0.58	0.58	0.69	0.69	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.18	0.16	0.09	0.20	0.22	0.17	0.26
s, saturation flow rate [veh/h]	3618	1372	928	3618	1299	1681	1064
c, Capacity [veh/h]	2113	802	677	2509	226	293	186
d1, Uniform Delay [s]	10.53	10.32	5.41	5.84	41.27	40.84	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.32	0.13	0.43
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.86	0.38	0.28	144.06	17.36	235.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

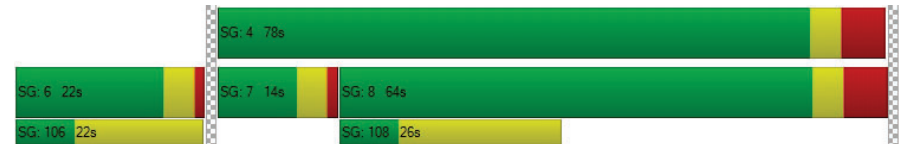
X, volume / capacity	0.31	0.28	0.12	0.28	1.27	0.95	1.47
d, Delay for Lane Group [s/veh]	10.90	11.19	5.79	6.12	185.33	58.20	276.56
Lane Group LOS	B	B	A	A	F	E	F
Critical Lane Group	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.51	2.50	0.57	2.58	14.56	8.11	16.63
50th-Percentile Queue Length [ft/ln]	87.85	62.43	14.15	64.41	364.04	202.63	415.87
95th-Percentile Queue Length [veh/ln]	6.33	4.50	1.02	4.64	23.16	12.77	27.17
95th-Percentile Queue Length [ft/ln]	158.14	112.38	25.46	115.93	578.94	319.36	679.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.90	11.19	5.79	6.12	150.17	193.32
Movement LOS	B	B	A	A	F	F
d_A, Approach Delay [s/veh]	10.97		6.08		172.82	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]			63.76			
Intersection LOS			E			
Intersection V/C			0.453			

Sequence

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



Intersection Level Of Service Report
Intersection 4: OCEAN AVENUE/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 12.9
Level Of Service: B
Volume to Capacity (v/c): 0.367

Intersection Setup

Name	Ocean Ave		Ocean Ave			Arizona Ave		
Approach	Northbound		Southbound			Westbound		
Lane Configuration								
Turning Movement	Thru	Right	U-turn	Left	Thru	U-turn	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00			35.00		
Grade [%]	0.00		0.00			0.00		
Crosswalk	Yes		Yes			Yes		

Volumes

Name	Ocean Ave		Ocean Ave			Arizona Ave		
Base Volume Input [veh/h]	740	190	0	120	760	0	120	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	43	0	16	-4	0	-2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	762	233	0	136	756	0	118	80
Peak Hour Factor	0.9093	0.9093	1.0000	0.9413	0.9413	1.0000	0.8467	0.8467
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	210	64	0	36	201	0	35	24
Total Analysis Volume [veh/h]	838	256	0	144	803	0	139	94
Presence of On-Street Parking	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	251		389			253		
Bicycle Volume [bicycles/h]	6		7			22		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	8	0	4	4	0	6	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	Lag	-	-	Lag	-
Minimum Green [s]	7	7	0	7	7	0	7	7
Maximum Green [s]	30	30	0	30	30	0	25	25
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	3.6	3.6
All red [s]	5.0	5.0	0.0	5.0	5.0	0.0	1.0	1.0
Split [s]	69	69	0	69	69	0	31	31
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
Walk [s]	7	7	0	0	0	0	7	7
Pedestrian Clearance [s]	10	10	0	0	0	0	18	18
Rest in Walk	No				No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	0.0	6.6	6.6	0.0	2.6	2.6
Minimum Recall	Yes				Yes		No	
Maximum Recall	No				No		No	
Pedestrian Recall	No				No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60
g_i, Effective Green Time [s]	62	62	62	62	25
g / C, Green / Cycle	0.62	0.62	0.62	0.62	0.25
(v / s)_i Volume / Saturation Flow Rate	0.23	0.19	0.22	0.22	0.14
s, saturation flow rate [veh/h]	3618	1339	662	3618	1726
c, Capacity [veh/h]	2236	827	389	2236	431
d1, Uniform Delay [s]	9.48	9.01	17.32	9.37	32.49
k, delay calibration	0.50	0.50	0.50	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	0.97	2.69	0.45	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

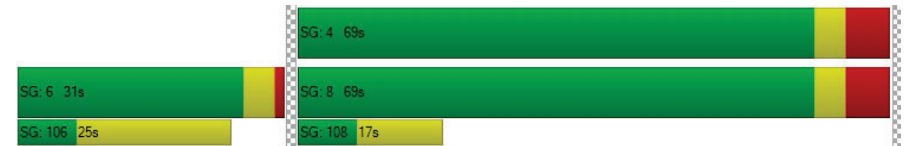
X, volume / capacity	0.37	0.31	0.37	0.36	0.54
d, Delay for Lane Group [s/veh]	9.97	9.98	20.01	9.82	32.88
Lane Group LOS	A	A	C	A	C
Critical Lane Group	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.36	2.67	2.42	4.12	4.82
50th-Percentile Queue Length [ft/ln]	108.91	66.63	60.49	103.02	120.50
95th-Percentile Queue Length [veh/ln]	7.78	4.80	4.35	7.42	8.42
95th-Percentile Queue Length [ft/ln]	194.48	119.93	108.87	185.43	210.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.97	9.98	20.01	20.01	9.82	32.88	32.88	32.88
Movement LOS	A	A	C	C	A	C	C	C
d_A, Approach Delay [s/veh]	9.97		11.37			32.88		
Approach LOS	A		B			C		
d_I, Intersection Delay [s/veh]	12.90							
Intersection LOS	B							
Intersection V/C	0.367							

Sequence

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



Intersection Level Of Service Report

Intersection 5: OCEAN AVENUE/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	38.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

Intersection Setup

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Santa Monica Blvd	
Base Volume Input [veh/h]	780	250	130	780	180	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	-9	-4	0	2	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	815	241	126	780	182	147
Peak Hour Factor	0.8870	0.8870	0.8750	0.8750	0.9069	0.9069
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	230	68	36	223	50	41
Total Analysis Volume [veh/h]	919	272	144	891	201	162
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	585		730		459	
Bicycle Volume [bicycles/h]	12		17		42	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	93.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Overlap
Signal Group	8	8	7	4	6	7
Auxiliary Signal Groups						6,7
Lead / Lag	-	-	Lead	-	Lag	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	15	30	25	15
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	1.0	5.0	1.0	1.0
Split [s]	69	69	12	81	19	12
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	8	8	0	0	12	0
Rest in Walk	No			No	Yes	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	2.6	6.6	2.6	2.6
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	0.00	6.60	2.60	0.00
g_i, Effective Green Time [s]	60	60	72	72	14	26
g / C, Green / Cycle	0.60	0.60	0.72	0.72	0.14	0.26
(v / s)_i Volume / Saturation Flow Rate	0.25	0.21	0.18	0.25	0.24	0.13
s, saturation flow rate [veh/h]	3618	1296	780	3618	832	1238
c, Capacity [veh/h]	2190	785	590	2618	120	325
d1, Uniform Delay [s]	10.44	9.85	5.30	5.06	42.78	31.27
k, delay calibration	0.50	0.50	0.50	0.50	0.38	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	1.21	0.98	0.35	329.71	0.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.35	0.24	0.34	1.67	0.50
d, Delay for Lane Group [s/veh]	11.03	11.07	6.28	5.42	372.49	31.71
Lane Group LOS	B	B	A	A	F	C
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.17	3.05	0.91	2.96	13.93	3.32
50th-Percentile Queue Length [ft/ln]	129.14	76.26	22.74	73.93	348.17	82.91
95th-Percentile Queue Length [veh/ln]	8.89	5.49	1.64	5.32	23.72	5.97
95th-Percentile Queue Length [ft/ln]	222.32	137.26	40.93	133.08	593.07	149.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.03	11.07	6.28	5.42	372.49	31.71
Movement LOS	B	B	A	A	F	C
d_A, Approach Delay [s/veh]	11.04		5.54		220.40	
Approach LOS	B		A		F	
d_I, Intersection Delay [s/veh]	38.19					
Intersection LOS	D					
Intersection V/C	0.525					

Sequence

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



Intersection Level Of Service Report
Intersection 6: OCEAN AVENUE/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	46.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Ocean Ave			Ocean Ave			Santa Monica Pier			Colorado Ave		
	10	1050	142	67	890	30	0	13	60	310	50	210
Base Volume Input [veh/h]	10	1050	142	67	890	30	0	13	60	310	50	210
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	0	0	2	0	0	0	0	0	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	1068	142	67	892	30	0	13	60	310	50	218
Peak Hour Factor	0.8914	0.8914	0.8613	0.9469	0.9520	0.9520	0.8522	0.5455	0.8522	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	300	41	18	234	8	0	6	18	87	14	61
Total Analysis Volume [veh/h]	11	1198	165	71	937	32	0	24	70	348	56	245
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			1733			0			1733		
Bicycle Volume [bicycles/h]	38			13			23			119		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	1	5	2	4	3	6	5
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	7	0	0	7	7	7	0	7	5	7	7
Maximum Green [s]	15	30	0	0	30	7	15	0	30	15	30	15
Amber [s]	3.6	3.6	0.0	0.0	3.6	20.0	3.6	0.0	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	0.0	1.0	0.0	2.0	1.0	1.0	1.0
Split [s]	12	75	0	0	63	27	18	0	63	12	30	18
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	7	0	7	0	7	7
Pedestrian Clearance [s]	0	20	0	0	20	20	20	0	20	0	10	20
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	18.0	2.6	0.0	3.6	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes		No				No	
Maximum Recall	No	No			No		No				No	
Pedestrian Recall	No	No			No		No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	1
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	C	C	C	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	75	75	68	68	8	32	32
g / C, Green / Cycle	0.50	0.50	0.46	0.46	0.05	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.26	0.26	0.04	0.22	0.18
s, saturation flow rate [veh/h]	662	3618	1900	1874	1615	1822	1397
c, Capacity [veh/h]	291	1806	867	855	86	392	301
d1, Uniform Delay [s]	21.67	28.10	29.76	29.90	70.24	58.85	56.01
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.46	0.27
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	1.94	2.60	2.72	6.72	51.51	12.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

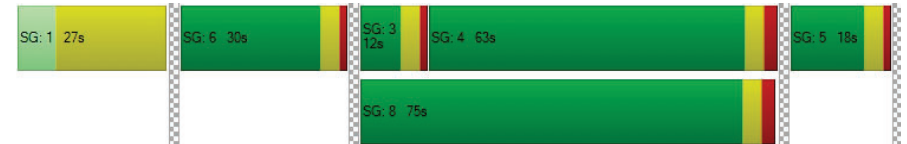
X, volume / capacity	0.04	0.66	0.56	0.57	0.81	1.03	0.82
d, Delay for Lane Group [s/veh]	21.69	30.04	32.35	32.62	76.96	110.37	68.49
Lane Group LOS	C	C	C	C	E	F	E
Critical Lane Group	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.20	16.59	13.49	13.57	2.82	20.60	9.96
50th-Percentile Queue Length [ft/ln]	5.02	414.87	337.20	339.26	70.48	515.03	249.06
95th-Percentile Queue Length [veh/ln]	0.36	23.28	19.51	19.61	5.07	28.55	15.14
95th-Percentile Queue Length [ft/ln]	9.03	581.89	487.78	490.29	126.86	713.67	378.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.69	30.04	0.00	0.00	32.48	32.62	76.96	0.00	76.96	110.37	110.37	68.49
Movement LOS	C	C			C	C	E		E	F	F	E
d_A, Approach Delay [s/veh]	29.96		32.49			76.96		94.56				
Approach LOS	C		C			E		F				
d_I, Intersection Delay [s/veh]	46.41											
Intersection LOS	D											
Intersection V/C	0.596											

Sequence

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



Intersection Level Of Service Report
Intersection 7: OCEAN AVENUE/MOOMAT AHIKO

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 31.8
 Level Of Service: C
 Volume to Capacity (v/c): 0.563

Intersection Setup

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	[Diagram]		[Diagram]		[Diagram]	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		0.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Moomat Ahiko Way	
Base Volume Input [veh/h]	360	900	870	200	240	700
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	918	872	200	240	700
Peak Hour Factor	0.9529	0.9529	0.9745	0.9745	0.9595	0.9595
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	94	241	224	51	63	182
Total Analysis Volume [veh/h]	378	963	895	205	250	730
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		153		619	
Bicycle Volume [bicycles/h]	0		18		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	6	8	4	4	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	31	64	64	64	25	45
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	0	7	7	7	0
Pedestrian Clearance [s]	0	0	25	25	15	0
Rest in Walk		No	No	No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes	Yes		No	No
Maximum Recall	No	No	No		No	No
Pedestrian Recall	No	No	No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	71	71	71	20	40
g / C, Green / Cycle	0.13	0.59	0.59	0.59	0.17	0.33
(v / s)_i Volume / Saturation Flow Rate	0.11	0.27	0.25	0.16	0.19	0.26
s, saturation flow rate [veh/h]	3514	3618	3618	1316	1322	2859
c, Capacity [veh/h]	442	2131	2131	775	225	956
d1, Uniform Delay [s]	51.35	13.81	13.46	12.00	49.75	35.68
k, delay calibration	0.04	0.50	0.50	0.50	0.34	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.88	0.69	0.61	0.83	82.48	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

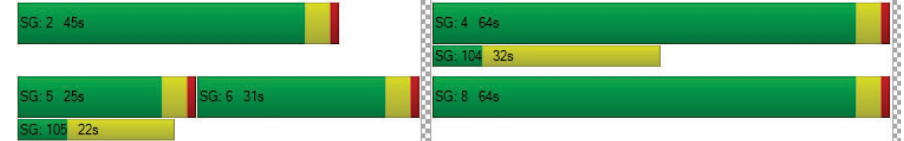
X, volume / capacity	0.86	0.45	0.42	0.26	1.11	0.76
d, Delay for Lane Group [s/veh]	53.24	14.50	14.07	12.83	132.23	36.17
Lane Group LOS	D	B	B	B	F	D
Critical Lane Group	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.67	7.30	6.61	2.80	12.24	10.18
50th-Percentile Queue Length [ft/ln]	141.86	182.42	165.16	70.09	305.96	254.61
95th-Percentile Queue Length [veh/ln]	9.58	11.73	10.82	5.05	18.89	15.42
95th-Percentile Queue Length [ft/ln]	239.53	293.17	270.55	126.16	472.31	385.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.24	14.50	14.07	12.83	132.23	36.17
Movement LOS	D	B	B	B	F	D
d_A, Approach Delay [s/veh]	25.42		13.84		60.67	
Approach LOS	C		B		E	
d_I, Intersection Delay [s/veh]	31.80					
Intersection LOS	C					
Intersection V/C	0.563					

Sequence

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



Intersection Level Of Service Report
Intersection 8: OCEAN AVENUE/PICO BOULEVARD

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 29.6
Level Of Service: C
Volume to Capacity (v/c): 0.570

Intersection Setup

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Approach	Northbound				Northeastbound				Southwestbound			
Lane Configuration					T T T				T T			
Turning Movement	Left	Left	Right	Right	Left	Thru	Right	Right2	Left2	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	0.00				35.00				35.00			
Grade [%]	0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes			

Volumes

Name	Ocean Ave				Pico Blvd				Pico Blvd			
Base Volume Input [veh/h]	0	0	0	0	70	180	90	3	190	98	300	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	70	180	90	3	190	98	300	361
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	0.7558	0.7558	0.7558	1.0000	0.9489	0.9471	0.9319	0.9319
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	23	60	30	1	50	26	80	97
Total Analysis Volume [veh/h]	0	0	0	0	93	238	119	3	200	103	322	387
Presence of On-Street Parking					No				No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	6				70				188			
Bicycle Volume [bicycles/h]	33				8				56			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss
Signal Group	0	0	0	0	7	2	4	0	1	0	6	0	
Auxiliary Signal Groups	-	-	-	-	Lead	-	-	-	Lead	-	-	-	
Lead / Lag	-	-	-	-	Lead	-	-	-	Lead	-	-	-	
Minimum Green [s]	0	0	0	0	5	7	7	0	5	0	7	0	
Maximum Green [s]	0	0	0	0	30	29	30	0	7	0	41	0	
Amber [s]	0.0	0.0	0.0	0.0	3.6	3.6	3.6	0.0	3.6	0.0	3.6	0.0	
All red [s]	0.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	1.0	0.0	
Split [s]	0	0	0	0	20	33	55	0	12	0	45	0	
Vehicle Extension [s]	0.0	0.0	0.0	0.0	2.0	3.0	2.0	0.0	2.0	0.0	3.0	0.0	
Walk [s]	0	0	0	0	0	5	7	0	0	0	7	0	
Pedestrian Clearance [s]	0	0	0	0	0	24	10	0	0	0	20	0	
Rest in Walk	No												
I1, Start-Up Lost Time [s]	0.0	0.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0	
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	2.6	2.6	2.6	0.0	2.6	0.0	2.6	0.0	
Minimum Recall	Yes												
Maximum Recall	No												
Pedestrian Recall	No												
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	47	47	47	59	59	59
g / C, Green / Cycle	0.39	0.39	0.39	0.49	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.09	0.10	0.12	0.17	0.17	0.27
s, saturation flow rate [veh/h]	1047	1900	1446	1170	1900	1453
c, Capacity [veh/h]	346	749	570	583	939	718
d1, Uniform Delay [s]	34.78	24.40	24.97	17.76	18.48	20.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.90	0.79	1.35	1.60	1.00	2.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.25	0.30	0.34	0.34	0.54
d, Delay for Lane Group [s/veh]	36.69	25.19	26.31	19.36	19.47	23.81
Lane Group LOS	D	C	C	B	B	C
Critical Lane Group	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.34	3.69	3.53	3.35	5.59	7.83
50th-Percentile Queue Length [ft/ln]	58.45	92.15	88.17	83.78	139.75	195.72
95th-Percentile Queue Length [veh/ln]	4.21	6.63	6.35	6.03	9.47	12.42
95th-Percentile Queue Length [ft/ln]	105.22	165.87	158.70	150.80	236.69	310.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	36.69	25.44	26.31	0.00	19.36	0.00	19.47	23.81
Movement LOS					D	C	C		B		B	C
d_A, Approach Delay [s/veh]	0.00				28.00				21.29			
Approach LOS	A				C				C			
d_I, Intersection Delay [s/veh]	29.56											
Intersection LOS	C											
Intersection V/C	0.570											

Intersection Setup

Name	Neilson Way				Ocean Ave			
Approach	Northwestbound				Southeastbound			
Lane Configuration								
Turning Movement	Left2	Left	Thru	Right	Left	Thru	Right	Right2
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00				30.00			
Grade [%]	0.00				0.00			
Crosswalk	Yes				Yes			

Volumes

Name	Neilson Way				Ocean Ave			
Base Volume Input [veh/h]	1	50	630	180	270	730	65	120
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	7	0	-5	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	50	637	180	265	736	65	120
Peak Hour Factor	1.0000	0.9421	0.9421	0.9421	0.9016	0.9016	0.9353	0.9624
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	13	169	48	73	204	17	31
Total Analysis Volume [veh/h]	1	53	676	191	294	816	69	125
Presence of On-Street Parking	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	266				111			
Bicycle Volume [bicycles/h]	33				24			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	118.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	0	0	8	2	7	4	0	6
Auxiliary Signal Groups								
Lead / Lag	-	-	-	-	Lead	-	-	-
Minimum Green [s]	0	0	7	7	5	7	0	7
Maximum Green [s]	0	0	27	29	30	30	0	41
Amber [s]	0.0	0.0	3.6	3.6	3.6	3.6	0.0	3.6
All red [s]	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0
Split [s]	0	0	55	33	20	55	0	45
Vehicle Extension [s]	0.0	0.0	2.0	3.0	2.0	2.0	0.0	3.0
Walk [s]	0	0	7	5	0	7	0	7
Pedestrian Clearance [s]	0	0	14	24	0	10	0	20
Rest in Walk			No			No		
I1, Start-Up Lost Time [s]	0.0	0.0	2.0	2.0	2.0	2.0	0.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.6	2.6	2.6	2.6	0.0	2.6
Minimum Recall			No		No	No		
Maximum Recall			No		No	No		
Pedestrian Recall			No		No	No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	32	32	32	51	51	51
g / C, Green / Cycle	0.26	0.26	0.26	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.15	0.26	0.25	0.26
s, saturation flow rate [veh/h]	605	3618	1245	1135	1900	1741
c, Capacity [veh/h]	84	951	327	445	815	747
d1, Uniform Delay [s]	58.89	40.07	38.48	26.17	26.17	26.57
k, delay calibration	0.04	0.04	0.04	0.12	0.11	0.13
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.86	0.37	0.62	1.86	0.67	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

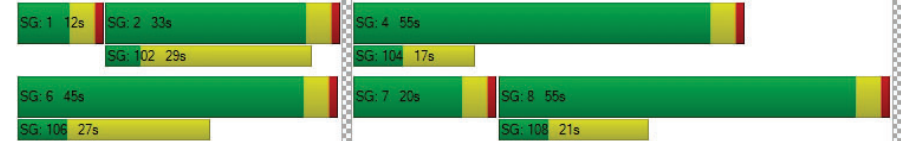
X, volume / capacity	0.63	0.71	0.58	0.66	0.59	0.62
d, Delay for Lane Group [s/veh]	61.75	40.44	39.10	28.03	26.85	27.58
Lane Group LOS	E	D	D	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.68	9.06	4.95	5.90	10.54	10.31
50th-Percentile Queue Length [ft/ln]	42.01	226.44	123.63	147.40	263.52	257.67
95th-Percentile Queue Length [veh/ln]	3.02	13.99	8.59	9.88	15.87	15.57
95th-Percentile Queue Length [ft/ln]	75.62	349.83	214.81	246.96	396.63	389.30

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	61.75	40.44	39.10	28.03	27.15	0.00	27.58
Movement LOS		E	D	D	C	C		C
d_A, Approach Delay [s/veh]	41.39				27.40			
Approach LOS	D				C			
d_I, Intersection Delay [s/veh]	29.56							
Intersection LOS	C							
Intersection V/C	0.570							

Sequence

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



Intersection Level Of Service Report

Intersection 11: SECOND ST/WILSHIRE BOULEVARD

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 264.0
 Level Of Service: F
 Volume to Capacity (v/c): 2.792

Intersection Setup

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Northbound				Southbound				Eastbound				Westbound			
Approach	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Speed [mph]	35.00				35.00				30.00				30.00			
Grade [%]	0.00				0.00				0.00				0.00			
Crosswalk	Yes				Yes				Yes				Yes			

Volumes

Name	2nd St				2nd St				Wilshire Blvd				Wilshire Blvd			
	Base Volume Input [veh/h]	0	70	200	180	0	100	90	50	30	155	50	0	190	480	210
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site-Generated Trips [veh/h]	0	0	0	-1	0	0	0	0	0	6	0	0	5	0	0	
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Hourly Volume [veh/h]	0	70	200	179	0	100	90	50	30	161	50	0	195	480	210	
Peak Hour Factor	1.000	0.938	0.938	0.938	1.000	0.923	0.923	0.923	0.8684	0.8684	0.8684	1.000	0.968	0.968	0.968	
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	
Total 15-Minute Volume [veh/h]	0	19	53	48	0	27	24	14	9	46	14	0	50	124	54	
Total Analysis Volume [veh/h]	0	75	213	191	0	108	97	54	35	185	58	0	201	496	217	
Presence of On-Street Parking	No			No	No			No	No		No	No	No		No	
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Volume [ped/h]	31				25				375				379			
Bicycle Volume [bicycles/h]	12				12				24				15			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	14.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permi	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi
Signal Group	0	8	8	8	0	4	4	4	2	2	2	0	6	6	6
Auxiliary Signal Groups															
Lead / Lag	-	Lag	-	-	-	Lag	-	-	Lag	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	0	30	30	30	0	30	30	30	30	30	30	0	30	30	30
Amber [s]	0.0	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	21	21	21	0	21	21	21	45	45	45	0	45	45	45
Vehicle Extension [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	0	7	7	7	7	7	7	0	7	7	7
Pedestrian Clearance [s]	0	21	21	21	0	20	20	20	14	14	14	0	14	14	14
Rest in Walk															
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	0.0	4.6	4.6	4.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall			No				No		Yes				Yes		
Maximum Recall							No		No				No		
Pedestrian Recall			No				No		No				No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	27

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	6.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	4.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	15	15	14	47	47	47	47	47
g / C, Green / Cycle	0.15	0.15	0.14	0.47	0.47	0.47	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.06	0.23	2.59	0.05	0.13	0.17	0.20	0.20
s, saturation flow rate [veh/h]	1256	1727	100	749	1812	1155	1900	1669
c, Capacity [veh/h]	73	268	66	306	856	494	898	789
d1, Uniform Delay [s]	50.02	42.26	48.41	24.79	16.07	24.38	17.35	17.44
k, delay calibration	0.04	0.22	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	37.04	237.24	1365.09	0.76	0.83	2.48	1.43	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

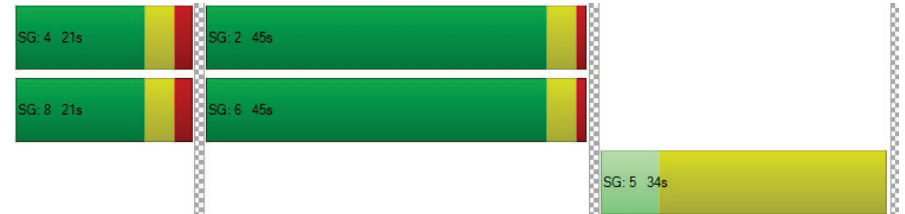
X, volume / capacity	1.03	1.51	3.95	0.11	0.28	0.41	0.42	0.43
d, Delay for Lane Group [s/veh]	87.05	279.50	1413.50	25.55	16.91	26.86	18.78	19.14
Lane Group LOS	F	F	F	C	B	C	B	B
Critical Lane Group	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.55	24.11	26.45	0.66	3.50	3.92	5.86	5.34
50th-Percentile Queue Length [ft/ln]	63.80	602.78	661.37	16.47	87.38	98.07	146.45	133.52
95th-Percentile Queue Length [veh/ln]	4.59	37.78	44.31	1.19	6.29	7.06	9.83	9.13
95th-Percentile Queue Length [ft/ln]	114.84	944.46	1107.63	29.65	157.29	176.53	245.69	228.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	87.05	87.05	279.5	279.5	1413.	1413.	1413.	1413.	25.55	16.91	16.91	26.86	26.86	18.87	19.14
Movement LOS	F	F	F	F	F	F	F	F	C	B	B	C	C	B	B
d_A, Approach Delay [s/veh]	249.37			1413.50			17.99			20.69					
Approach LOS	F			F			B			C					
d_I, Intersection Delay [s/veh]	263.97														
Intersection LOS	F														
Intersection V/C	2.792														

Sequence

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



Intersection Level Of Service Report
Intersection 12: SECOND STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 35.5
Level Of Service: D
Volume to Capacity (v/c): 0.622

Intersection Setup

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Arizona Ave			ARIZONA AVENUE		
Base Volume Input [veh/h]	70	330	120	30	120	40	60	180	80	110	140	140
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	-3	0	-2	6	0	0	0	-2	37	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	330	117	30	118	46	60	180	80	108	177	140
Peak Hour Factor	0.9473	0.9473	0.9473	0.8457	0.8457	0.8457	0.8114	0.8114	0.8114	0.8811	0.8811	0.8811
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	87	31	9	35	14	18	55	25	31	50	40
Total Analysis Volume [veh/h]	101	348	124	35	140	54	74	222	99	123	201	159
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	186			186			186			186		
Bicycle Volume [bicycles/h]	15			18			10			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	30	30	0	0	30	30	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	40	40	0	0	40	40	33	33	33	0	33	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	13	13	0	0	16	16	16	16	16	0	16	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	46	46
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.08	0.03	0.11	0.29	0.44
s, saturation flow rate [veh/h]	1208	1900	1546	1049	1783	1342	1100
c, Capacity [veh/h]	232	462	375	130	433	654	546
d1, Uniform Delay [s]	41.08	35.09	31.16	46.16	32.16	19.55	26.47
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.48	0.95	0.19	0.41	0.27	4.11	18.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

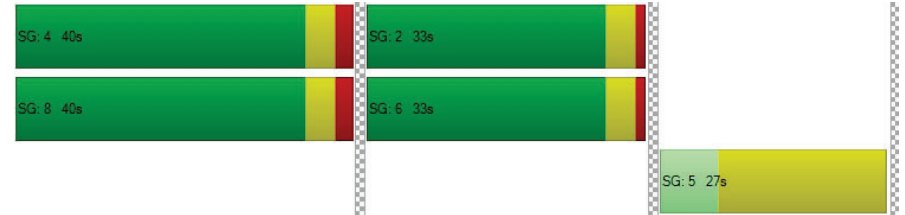
X, volume / capacity	0.44	0.75	0.33	0.27	0.45	0.60	0.89
d, Delay for Lane Group [s/veh]	41.56	36.04	31.35	46.57	32.43	23.66	45.13
Lane Group LOS	D	D	C	D	C	C	D
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.35	7.76	2.44	0.85	3.94	7.08	13.36
50th-Percentile Queue Length [ft/ln]	58.66	194.08	60.95	21.32	98.42	177.11	334.11
95th-Percentile Queue Length [veh/ln]	4.22	12.33	4.39	1.54	7.09	11.45	19.36
95th-Percentile Queue Length [ft/ln]	105.58	308.32	109.70	38.38	177.16	286.24	483.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.56	36.04	31.35	46.57	32.43	32.43	23.66	23.66	23.66	45.13	45.13	45.13
Movement LOS	D	D	C	D	C	C	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	35.99			34.59			23.66			45.13		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	35.53											
Intersection LOS	D											
Intersection V/C	0.622											

Sequence

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



Intersection Level Of Service Report

Intersection 13: SECOND STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 157.0
 Analysis Method: HCM 2010 Level Of Service: F
 Analysis Period: 15 minutes Volume to Capacity (v/c): 1.265

Intersection Setup

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	20	360	120	60	210	40	40	320	40	110	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-5	11	-2	53	41	39	0	-21	-9	0	-6	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	371	118	113	251	79	40	299	31	110	254	242
Peak Hour Factor	0.8882	0.8882	0.8882	0.9000	0.9000	0.9000	0.9236	0.9236	0.9236	0.8697	0.8697	0.8697
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	104	33	31	70	22	11	81	8	32	73	70
Total Analysis Volume [veh/h]	17	418	133	126	279	88	43	324	34	126	292	278
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	31			22			1066			1049		
Bicycle Volume [bicycles/h]	19			16			36			20		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	0	0	4	4	2	2	2	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	7	7	0	0	7	7	7	7	7	0	7	0
Maximum Green [s]	25	25	0	0	25	25	30	30	30	0	30	0
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	3.6	3.6	3.6	0.0	3.6	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	2.0	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	25	25	0	0	25	25	48	48	48	0	48	0
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
Walk [s]	7	7	0	0	7	7	7	7	7	0	7	0
Pedestrian Clearance [s]	8	8	0	0	8	8	11	11	11	0	10	0
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	0.0	0.0	3.6	3.6	2.6	2.6	2.6	0.0	2.6	0.0
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	50	50	50	50
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.50	0.50	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.09	0.13	0.20	0.67	0.02	1.05	0.18
s, saturation flow rate [veh/h]	1031	1900	1524	984	1797	552	1570	400	1581
c, Capacity [veh/h]	72	370	297	72	350	318	789	248	795
d1, Uniform Delay [s]	49.97	40.25	35.52	49.97	40.25	34.96	12.63	29.60	14.99
k, delay calibration	0.04	0.29	0.04	0.04	0.24	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.61	77.28	0.40	340.97	46.91	99.72	0.10	325.49	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

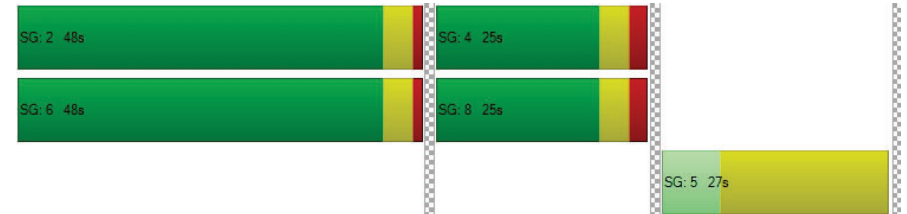
X, volume / capacity	0.24	1.13	0.45	1.75	1.05	1.16	0.04	1.69	0.35
d, Delay for Lane Group [s/veh]	50.58	117.52	35.91	390.94	87.15	134.68	12.73	355.09	16.21
Lane Group LOS	D	F	D	F	F	F	B	F	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.43	16.78	2.84	8.61	12.92	15.39	0.40	28.59	3.95
50th-Percentile Queue Length [ft/ln]	10.79	419.40	70.99	215.18	322.93	384.70	10.04	714.76	98.67
95th-Percentile Queue Length [veh/ln]	0.78	25.01	5.11	15.49	19.29	24.04	0.72	48.85	7.10
95th-Percentile Queue Length [ft/ln]	19.42	625.30	127.78	387.33	482.31	601.04	18.07	1221.31	177.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.58	117.52	35.91	390.94	87.15	87.15	134.68	134.68	12.73	355.09	355.09	16.21
Movement LOS	D	F	D	F	F	F	F	F	B	F	F	B
d_A, Approach Delay [s/veh]	96.41			164.79			124.34			219.73		
Approach LOS	F			F			F			F		
d_I, Intersection Delay [s/veh]	157.00											
Intersection LOS	F											
Intersection V/C	1.265											

Sequence

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



Intersection Level Of Service Report
Intersection 14: SECOND STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 33.4
Level Of Service: C
Volume to Capacity (v/c): 0.439

Intersection Setup

Name	2nd St			2nd St			Broadway			Br		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T			T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	1	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	2nd St			2nd St			Broadway			Br		
	Base Volume Input [veh/h]	40	200	270	110	320	20	30	220	140	160	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	3	29	0	0	0	0	0	0	-1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	206	270	113	349	20	30	220	140	160	290	299
Peak Hour Factor	0.8437	0.8437	0.8437	0.9352	0.9352	0.9352	0.9561	0.9561	0.9561	0.8663	0.8663	0.8663
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	61	80	30	93	5	8	58	37	46	84	86
Total Analysis Volume [veh/h]	47	244	320	121	373	21	31	230	146	185	335	345
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			54			2079			2069		
Bicycle Volume [bicycles/h]	45			24			40			17		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0
Split [s]	41	30	41	41	30	41	30	41	30	30	41	30
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	10	12	10	10	10	10	10	10	10	12	10	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	3.6	2.6	3.6	3.6	2.6	3.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	24	24	24	24	24	43	43	43	43	43
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.43	0.43	0.43	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.22	0.10	0.21	0.03	0.21	0.18	0.18	0.22
s, saturation flow rate [veh/h]	1006	1900	1473	1154	1878	1062	1753	1023	1900	1559
c, Capacity [veh/h]	98	464	360	204	459	377	759	331	823	675
d1, Uniform Delay [s]	49.29	32.75	36.46	43.79	36.12	26.17	20.46	34.00	19.52	20.64
k, delay calibration	0.04	0.04	0.18	0.04	0.15	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.36	0.34	11.41	1.02	6.64	0.43	2.30	6.64	1.49	2.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

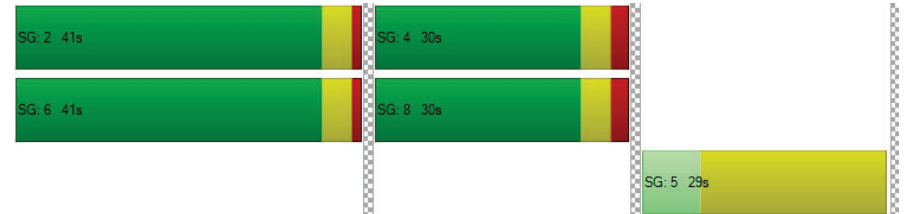
X, volume / capacity	0.48	0.53	0.89	0.59	0.86	0.08	0.50	0.56	0.41	0.51
d, Delay for Lane Group [s/veh]	50.65	33.09	47.87	44.81	42.75	26.60	22.77	40.64	21.01	23.39
Lane Group LOS	D	C	D	D	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.20	5.05	8.45	2.96	9.76	0.58	6.53	4.59	5.48	6.11
50th-Percentile Queue Length [ft/ln]	29.90	126.26	211.30	74.07	244.06	14.43	163.23	114.70	136.91	152.73
95th-Percentile Queue Length [veh/ln]	2.15	8.74	13.22	5.33	14.89	1.04	10.72	8.10	9.31	10.16
95th-Percentile Queue Length [ft/ln]	53.83	218.40	330.49	133.33	372.16	25.98	268.00	202.52	232.85	254.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.65	33.09	47.87	44.81	42.75	42.75	26.60	22.77	22.77	40.64	21.01	23.39
Movement LOS	D	C	D	D	D	D	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	42.18			43.24			23.06			26.16		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	33.38											
Intersection LOS	C											
Intersection V/C	0.439											

Sequence

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



Intersection Level Of Service Report
Intersection 15: SECOND STREET/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 42.7
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.461

Intersection Setup

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			2nd St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	10	440	0	29	410	100	66	90	0	80	350
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	29	0	0	0	0	0	8	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	444	0	29	439	100	66	90	0	80	358	201
Peak Hour Factor	0.9313	0.9313	1.0000	0.9439	0.9303	0.9303	0.8321	0.8321	1.0000	0.9411	0.9411	0.9411
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	119	0	8	118	27	20	27	0	21	95	53
Total Analysis Volume [veh/h]	11	477	0	31	472	107	79	108	0	85	380	214
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	728			728			728			728		
Bicycle Volume [bicycles/h]	13			149			63			49		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	102.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	4	4	4	5	2	0	0	6	4
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	4.6
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	7	7	7	10	0	0	0	7	7
Maximum Green [s]	0	30	0	25	25	25	10	0	0	0	30	25
Amber [s]	0.0	3.6	0.0	3.6	3.6	3.6	19.0	0.0	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	2.0
Split [s]	0	40	0	40	40	40	29	0	0	0	51	40
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	10	0	13	13	13	19	0	0	0	10	13
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	0.0	3.6	3.6	3.6	17.0	0.0	0.0	0.0	2.6	3.6
Minimum Recall	-	No	-	-	No	-	-	-	-	-	Yes	-
Maximum Recall	-	No	-	-	No	-	-	-	-	-	No	-
Pedestrian Recall	-	Yes	-	-	No	-	-	-	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	R	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	34	34	34	34	56	56
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.01	0.26	0.25	0.08	0.20	0.20
s, saturation flow rate [veh/h]	918	1863	1863	1408	1879	1500
c, Capacity [veh/h]	83	532	532	402	884	706
d1, Uniform Delay [s]	57.72	41.13	40.98	33.11	20.95	21.14
k, delay calibration	0.04	0.32	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.27	14.46	19.27	0.13	1.47	1.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.13	0.90	0.89	0.27	0.42	0.44
d, Delay for Lane Group [s/veh]	57.99	55.59	60.25	33.24	22.42	23.09
Lane Group LOS	E	E	E	C	C	C
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.34	15.54	15.92	2.41	7.31	6.18
50th-Percentile Queue Length [ft/ln]	8.39	388.50	397.97	60.22	182.67	154.48
95th-Percentile Queue Length [veh/ln]	0.60	22.00	22.46	4.34	11.74	10.26
95th-Percentile Queue Length [ft/ln]	15.10	550.12	561.55	108.39	293.50	256.40

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.99	55.59	0.00	0.00	60.25	33.24	0.00	0.00	0.00	22.42	22.59	23.09
Movement LOS	E	E			E	C				C	C	C
d_A, Approach Delay [s/veh]	55.64		55.26		0.00		22.73					
Approach LOS	E		E		A		C					
d_I, Intersection Delay [s/veh]	42.71											
Intersection LOS	D											
Intersection V/C	0.461											

Sequence

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



Intersection Level Of Service Report
Intersection 17: MAIN STREET/PICO BOULEVARD

Control Type: Signalized Delay (sec / veh): 46.0
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.602

Intersection Setup

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St			Main St			Pico Blvd			Pico Blvd		
	120	340	250	130	120	70	90	520	30	330	720	190
Base Volume Input [veh/h]	120	340	250	130	120	70	90	520	30	330	720	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	15	4	0	0	-5	0	0	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	120	344	250	145	124	70	90	515	30	330	731	190
Peak Hour Factor	0.9113	0.9113	0.9113	0.9394	0.9394	0.9394	0.9213	0.9213	0.9213	0.8418	0.8418	0.8418
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	94	69	39	33	19	24	140	8	98	217	56
Total Analysis Volume [veh/h]	132	377	274	154	132	75	98	559	33	392	868	226
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	53			35			29			41		
Bicycle Volume [bicycles/h]	6			2			18			64		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	2	8	2	7	4	6	5	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	5	7	7	5	7	7	5	7	7
Maximum Green [s]	30	25	30	15	25	30	15	30	25	15	30	25
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	28	34	28	13	47	28	12	28	47	15	28	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	0	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	13	15	13	0	14	16	0	13	14	0	16	15
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	46	46	46	35	20	20	35	26	26
g / C, Green / Cycle	0.39	0.39	0.39	0.51	0.51	0.51	0.39	0.23	0.23	0.39	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.10	0.20	0.18	0.13	0.07	0.05	0.14	0.16	0.16	0.33	0.30	0.32
s, saturation flow rate [veh/h]	1259	1900	1540	1171	1900	1567	708	1900	1818	1197	1900	1686
c, Capacity [veh/h]	496	737	597	560	962	793	348	427	409	462	547	485
d1, Uniform Delay [s]	22.53	21.04	20.51	13.18	11.79	11.52	20.55	32.10	32.26	24.96	32.06	32.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.33	0.38
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.31	2.53	2.53	1.21	0.30	0.24	0.16	0.78	0.89	17.41	38.40	65.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

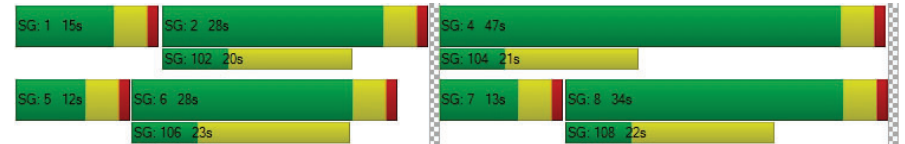
X, volume / capacity	0.27	0.51	0.46	0.27	0.14	0.09	0.28	0.70	0.72	0.85	1.03	1.10
d, Delay for Lane Group [s/veh]	23.84	23.57	23.04	14.39	12.09	11.76	20.71	32.88	33.15	42.37	70.46	97.55
Lane Group LOS	C	C	C	B	B	B	C	C	C	D	F	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.19	6.26	4.49	1.75	1.39	0.78	1.27	5.85	5.79	8.28	17.09	18.82
50th-Percentile Queue Length [ft/ln]	54.82	156.54	112.24	43.65	34.80	19.52	31.70	146.32	144.67	207.05	427.33	470.50
95th-Percentile Queue Length [veh/ln]	3.95	10.37	7.96	3.14	2.51	1.41	2.28	9.82	9.73	13.00	24.28	27.44
95th-Percentile Queue Length [ft/ln]	98.68	259.14	199.12	78.57	62.63	35.14	57.06	245.51	243.30	325.04	606.93	685.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.84	23.57	23.04	14.39	12.09	11.76	20.71	33.00	33.15	42.37	80.03	97.55
Movement LOS	C	C	C	B	B	B	C	C	C	D	F	F
d_A, Approach Delay [s/veh]	23.43			13.00			31.26			72.76		
Approach LOS	C			B			C			E		
d_I, Intersection Delay [s/veh]	46.00											
Intersection LOS	D											
Intersection V/C	0.602											

Sequence

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



Intersection Level Of Service Report

Intersection 30: FOURTH STREET/WILSHIRE BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	48.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

Intersection Setup

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Wilshire Blvd			Wilshire Blvd		
	70	150	140	100	260	20	30	520	60	210	780	110
Base Volume Input [veh/h]	70	150	140	100	260	20	30	520	60	210	780	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	6	-1	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	150	140	100	260	20	30	526	59	210	784	110
Peak Hour Factor	0.7729	0.7729	0.7729	0.9285	0.9285	0.9285	0.9402	0.9402	0.9402	0.9065	0.9065	0.9065
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	49	45	27	70	5	8	140	16	58	216	30
Total Analysis Volume [veh/h]	91	194	181	108	280	22	32	559	63	232	865	121
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	23			35			360			281		
Bicycle Volume [bicycles/h]	10			8			15			7		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	8	8	8	4	4	4	0	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	0	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	25	25	25	25	25	0	28	28	14	42	42
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	0	7	7	0	7	7
Pedestrian Clearance [s]	19	19	19	18	18	18	0	13	13	0	12	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes		No	Yes	
Maximum Recall		No			No			No		No	No	
Pedestrian Recall		No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	3
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	26

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	19	19	19	19	19	19	30	30	44	44	44
g / C, Green / Cycle	0.19	0.19	0.19	0.19	0.19	0.19	0.30	0.30	0.44	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.08	0.10	0.11	0.09	0.15	0.01	0.06	0.33	0.21	0.26	0.27
s, saturation flow rate [veh/h]	1117	1900	1577	1208	1900	1581	580	1862	1086	1900	1806
c, Capacity [veh/h]	110	368	306	171	368	307	117	564	344	844	803
d1, Uniform Delay [s]	49.42	36.27	36.79	46.34	38.20	33.03	45.12	34.93	22.91	21.04	21.12
k, delay calibration	0.04	0.04	0.04	0.04	0.06	0.04	0.50	0.50	0.18	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.94	0.43	0.68	1.43	1.69	0.04	5.70	68.89	3.89	3.09	3.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

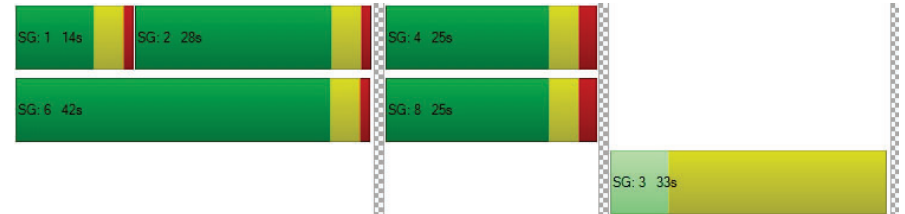
X, volume / capacity	0.83	0.53	0.59	0.63	0.76	0.07	0.27	1.10	0.67	0.60	0.60
d, Delay for Lane Group [s/veh]	55.36	36.71	37.47	47.77	39.89	33.07	50.82	103.82	26.80	24.13	24.45
Lane Group LOS	E	D	D	D	D	C	D	F	C	C	C
Critical Lane Group	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.43	4.22	4.01	2.73	6.51	0.43	0.96	24.15	3.72	9.33	9.03
50th-Percentile Queue Length [ft/ln]	60.73	105.40	100.14	68.18	162.83	10.85	23.90	603.82	92.95	233.16	225.80
95th-Percentile Queue Length [veh/ln]	4.37	7.58	7.21	4.91	10.70	0.78	1.72	34.25	6.69	14.33	13.96
95th-Percentile Queue Length [ft/ln]	109.31	189.59	180.26	122.72	267.46	19.52	43.02	856.14	167.31	358.36	349.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.36	36.71	37.47	47.77	39.89	33.07	50.82	103.82	103.82	26.80	24.26	24.45
Movement LOS	E	D	D	D	D	C	D	F	F	C	C	C
d_A, Approach Delay [s/veh]	40.65			41.60			101.23			24.76		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	48.17											
Intersection LOS	D											
Intersection V/C	0.568											

Sequence

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



Intersection Level Of Service Report
Intersection 31: FOURTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 104.8
Level Of Service: F
Volume to Capacity (v/c): 0.722

Intersection Setup

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			+			+		
Lane Configuration	[Diagram]			[Diagram]			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Arizona Ave			Arizona Ave		
	70	310	70	50	400	60	40	150	160	110	290	40
Base Volume Input [veh/h]	70	310	70	50	400	60	40	150	160	110	290	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	0	-3	2	0	-1	-2	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	310	70	50	397	62	40	149	158	110	314	40
Peak Hour Factor	0.8863	0.8863	0.8863	0.7794	0.7794	0.7794	0.8804	0.8804	0.8804	0.9025	0.9025	0.9025
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	87	20	16	127	20	11	42	45	30	87	11
Total Analysis Volume [veh/h]	88	350	79	64	509	80	45	169	179	122	348	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	165			165			165			165		
Bicycle Volume [bicycles/h]	19			14			9			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	99.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	6	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	Lag	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	7	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	25	25	25
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	3.6	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	37	37	37	37	0	0	33	0	33	33	33
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	7	7	7
Pedestrian Clearance [s]	0	10	10	10	10	0	0	10	0	11	11	11
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	2.6	2.6	2.6
Minimum Recall	-	Yes	-	-	Yes	-	-	No	-	-	No	-
Maximum Recall	-	No	-	-	No	-	-	No	-	-	No	-
Pedestrian Recall	-	No	-	-	No	-	-	No	-	-	No	-
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	39	39	39	39	28
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.28
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.05	0.06	0.16	0.16	0.28
s, saturation flow rate [veh/h]	840	1900	1554	1047	1900	1792	1520
c, Capacity [veh/h]	283	746	610	312	746	704	472
d1, Uniform Delay [s]	31.36	22.61	19.43	31.62	21.92	21.98	33.87
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.31
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.85	2.11	0.44	1.48	1.62	1.76	10.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

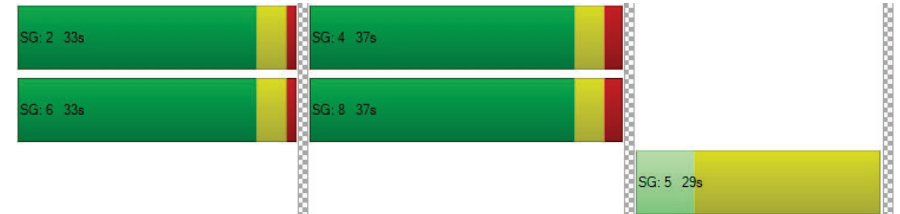
X, volume / capacity	0.31	0.47	0.13	0.20	0.40	0.41	0.83
d, Delay for Lane Group [s/veh]	34.21	24.73	19.87	33.09	23.54	23.74	44.18
Lane Group LOS	C	C	B	C	C	C	D
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.96	6.33	1.22	1.37	5.25	5.06	10.29
50th-Percentile Queue Length [ft/ln]	49.05	158.34	30.45	34.35	131.17	126.60	257.29
95th-Percentile Queue Length [veh/ln]	3.53	10.46	2.19	2.47	9.00	8.75	15.55
95th-Percentile Queue Length [ft/ln]	88.30	261.52	54.81	61.82	225.08	218.86	388.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.21	24.73	19.87	33.09	23.62	23.74	44.18	44.18	44.18	332.92	332.92	332.92
Movement LOS	C	C	B	C	C	C	D	D	D	F	F	F
d_A, Approach Delay [s/veh]	25.60			24.56			44.18			332.92		
Approach LOS	C			C			D			F		
d_I, Intersection Delay [s/veh]	104.84											
Intersection LOS	F											
Intersection V/C	0.722											

Sequence

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



Intersection Level Of Service Report

Intersection 32: FOURTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 34.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.515

Intersection Setup

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Santa Monica Blvd			Santa Monica Blvd		
	100	410	100	120	500	80	0	410	170	0	400	190
Base Volume Input [veh/h]	100	410	100	120	500	80	0	410	170	0	400	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	6	0	0	-3	-2	0	29	1	0	6	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	103	416	100	120	497	78	0	439	171	0	406	192
Peak Hour Factor	0.8258	0.8258	0.8258	0.9269	0.9269	0.9269	1.0000	0.9244	0.9244	1.0000	0.8780	0.8780
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	126	30	32	134	21	0	119	46	0	116	55
Total Analysis Volume [veh/h]	125	504	121	129	536	84	0	475	185	0	462	219
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			40			1011			826		
Bicycle Volume [bicycles/h]	18			23			18			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	38.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	8	4	4	0	0	2	0	0	6	6
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	0	7	0	0	7	7
Maximum Green [s]	0	30	30	30	30	0	0	30	0	0	30	30
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	3.6
All red [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0
Split [s]	0	43	43	43	43	0	0	30	0	0	30	30
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
Walk [s]	0	7	7	7	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	9	9	9	9	0	0	12	0	0	12	12
Rest in Walk	-	-	-	-	-	-	-	-	-	-	-	-
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	3.6	3.6	3.6	3.6	0.0	0.0	2.6	0.0	0.0	2.6	2.6
Minimum Recall		Yes			Yes			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	20

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	3.60	3.60	3.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	44	44	44	44	44	25	25	25	25	25
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.25	0.25	0.25	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.15	0.27	0.08	0.14	0.17	0.17	0.25	0.12	0.18	0.20
s, saturation flow rate [veh/h]	816	1900	1581	909	1900	1798	1900	1570	1900	1682
c, Capacity [veh/h]	322	842	700	269	842	796	483	399	483	428
d1, Uniform Delay [s]	28.46	21.11	16.80	35.76	18.62	18.65	37.05	31.50	33.86	34.84
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.29	0.04	0.09	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.51	3.14	0.54	6.03	1.29	1.38	27.00	0.31	1.50	4.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

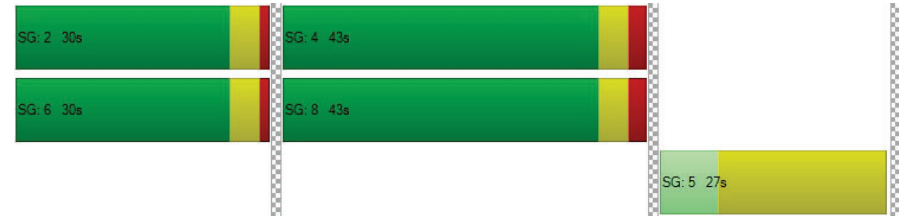
X, volume / capacity	0.39	0.60	0.17	0.48	0.38	0.38	0.98	0.46	0.70	0.80
d, Delay for Lane Group [s/veh]	31.97	24.25	17.33	41.79	19.90	20.04	64.05	31.81	35.36	39.55
Lane Group LOS	C	C	B	D	B	C	E	C	D	D
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.70	9.20	1.72	3.25	5.00	4.80	14.92	3.77	7.60	8.17
50th-Percentile Queue Length [ft/ln]	67.48	230.07	43.05	81.29	124.97	120.11	372.95	94.34	189.97	204.30
95th-Percentile Queue Length [veh/ln]	4.86	14.18	3.10	5.85	8.67	8.40	21.25	6.79	12.12	12.86
95th-Percentile Queue Length [ft/ln]	121.46	354.44	77.49	146.32	216.63	209.98	531.31	169.81	302.99	321.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	31.97	24.25	17.33	41.79	19.96	20.04	0.00	64.05	31.81	0.00	36.46	39.55
Movement LOS	C	C	B	D	B	C		E	C		D	D
d_A, Approach Delay [s/veh]	24.42			23.73			55.02			37.46		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	34.47											
Intersection LOS	C											
Intersection V/C	0.515											

Sequence

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



Intersection Level Of Service Report
Intersection 33: FOURTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 44.3
Level Of Service: D
Volume to Capacity (v/c): 0.587

Intersection Setup

Name	4th St			4th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Broadway			Broadway		
	Base Volume Input [veh/h]	70	450	150	120	420	90	0	310	130	80	420
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-1	9	0	0	-2	0	0	-3	6	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	459	150	120	418	90	0	307	136	80	420	100
Peak Hour Factor	0.8647	0.8647	0.8647	0.7777	0.7777	0.7777	1.0000	0.8982	0.8982	0.8741	0.8741	0.8741
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	133	43	39	134	29	0	85	38	23	120	29
Total Analysis Volume [veh/h]	80	531	173	154	537	116	0	342	151	92	480	114
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	29			20			784			549		
Bicycle Volume [bicycles/h]	31			21			30			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	25.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Overlap	ProtPer	Permiss	Permiss
Signal Group	3	8	2	7	4	6	0	2	3	1	6	8
Auxiliary Signal Groups									2,3			
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	0	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	0	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	2.0	1.0	1.0	2.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0
Split [s]	15	34	30	15	34	42	0	30	15	12	42	34
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	12	12	0	11	11	0	12	0	0	11	12
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	2.6	2.6	3.6	2.6	0.0	2.6	2.6	2.6	2.6	3.6
Minimum Recall	No	Yes		No	Yes			No	No	No	No	No
Maximum Recall	No	No		No	No			No	No	No	No	No
Pedestrian Recall	No	No		No	No			No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	7
Pedestrian Clearance [s]	22

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	5.60	5.60	5.60	5.60	5.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	3.60	3.60	0.00	3.60	3.60	2.60	0.00	0.00	2.60	2.60
g_i, Effective Green Time [s]	10	40	40	53	38	38	23	38	35	35	35
g / C, Green / Cycle	0.08	0.33	0.33	0.44	0.32	0.32	0.20	0.32	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.28	0.11	0.14	0.18	0.18	0.18	0.10	0.07	0.25	0.07
s, saturation flow rate [veh/h]	1810	1900	1562	1078	1900	1765	1900	1562	1257	1900	1570
c, Capacity [veh/h]	152	633	521	331	607	564	372	496	268	551	455
d1, Uniform Delay [s]	52.75	37.04	30.02	25.57	33.83	33.92	47.40	30.95	33.96	40.51	32.65
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.50	0.19	0.04	0.04	0.28	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.05	12.56	1.71	4.63	3.63	4.01	14.99	0.13	0.28	10.40	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.84	0.33	0.46	0.55	0.56	0.92	0.30	0.34	0.87	0.25
d, Delay for Lane Group [s/veh]	53.80	49.60	31.72	30.20	37.45	37.93	62.39	31.08	34.24	50.91	32.75
Lane Group LOS	D	D	C	C	D	D	E	C	C	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.34	16.28	3.96	3.04	8.62	8.18	11.54	3.34	2.02	14.81	2.54
50th-Percentile Queue Length [ft/ln]	58.53	406.95	99.03	75.88	215.42	204.54	288.43	83.48	50.40	370.28	63.59
95th-Percentile Queue Length [veh/ln]	4.21	22.89	7.13	5.46	13.43	12.87	17.11	6.01	3.63	21.12	4.58
95th-Percentile Queue Length [ft/ln]	105.36	572.37	178.25	136.59	335.77	321.81	427.69	150.27	90.72	528.08	114.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.80	49.60	31.72	30.20	37.63	37.93	0.00	62.39	31.08	34.24	50.91	32.75
Movement LOS	D	D	C	C	D	D		E	C	C	D	C
d_A, Approach Delay [s/veh]	46.08			36.26			52.80			45.66		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.31											
Intersection LOS	D											
Intersection V/C	0.587											

Sequence

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



Intersection Level Of Service Report
Intersection 34: FOURTH STREET/COLORADO AVENUE

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.444

Intersection Setup

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	4th St			4th St			Colorado Ave			Colorado Ave		
	Base Volume Input [veh/h]	150	590	0	0	650	110	181	0	84	160	290
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	8	0	0	5	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	160	598	0	0	655	110	181	0	84	160	290	40
Peak Hour Factor	0.8365	0.8365	1.0000	1.0000	0.9062	0.9062	0.8717	1.0000	0.8717	0.9098	0.9098	0.9098
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	179	0	0	181	30	52	0	24	44	80	11
Total Analysis Volume [veh/h]	191	715	0	0	723	121	208	0	96	176	319	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	66			6			691			628		
Bicycle Volume [bicycles/h]	4			70			4			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Overlap	Permiss	Permiss	Permiss
Signal Group	3	8	0	0	4	6	5	0	3	1	6	8
Auxiliary Signal Groups									3			
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	0	7	7	10	0	5	0	7	7
Maximum Green [s]	20	40	0	0	30	40	10	0	20	0	40	40
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	19.0	0.0	3.6	0.0	3.6	3.6
All red [s]	1.0	2.0	0.0	0.0	2.0	1.0	0.0	0.0	1.0	0.0	1.0	2.0
Split [s]	15	71	0	0	56	20	29	0	15	0	20	71
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	10	0	0	0	7	7
Pedestrian Clearance [s]	0	17	0	0	17	16	19	0	0	0	16	17
Rest in Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	3.6	0.0	0.0	3.6	2.6	17.0	0.0	2.6	0.0	2.6	3.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	5
Pedestrian Walk [s]	10
Pedestrian Clearance [s]	19

Lane Group Calculations

Lane Group	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.60	5.60	5.60	5.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	3.60	3.60	3.60	2.60	2.60
g_i, Effective Green Time [s]	70	70	57	57	21	21
g / C, Green / Cycle	0.58	0.58	0.48	0.48	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.23	0.20	0.22	0.24	0.15	0.15
s, saturation flow rate [veh/h]	839	3618	1900	1782	1843	1672
c, Capacity [veh/h]	469	2115	909	852	317	287
d1, Uniform Delay [s]	13.96	12.91	21.00	21.41	48.62	48.65
k, delay calibration	0.17	0.50	0.50	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.87	0.43	1.71	2.05	3.49	3.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.34	0.46	0.50	0.89	0.89
d, Delay for Lane Group [s/veh]	14.83	13.34	22.71	23.46	52.10	52.58
Lane Group LOS	B	B	C	C	D	D
Critical Lane Group	Yes	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.45	5.01	8.17	8.37	8.62	7.89
50th-Percentile Queue Length [ft/ln]	61.32	125.21	204.13	209.26	215.52	197.27
95th-Percentile Queue Length [veh/ln]	4.42	8.68	12.85	13.11	13.44	12.50
95th-Percentile Queue Length [ft/ln]	110.38	216.96	321.29	327.87	335.90	312.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	14.83	13.34	0.00	0.00	23.02	23.46	0.00	0.00	0.00	52.10	52.42	52.58
Movement LOS	B	B			C	C				D	D	D
d_A, Approach Delay [s/veh]	13.66		23.09		0.00		52.33					
Approach LOS	B		C		A		D					
d_I, Intersection Delay [s/veh]	26.24											
Intersection LOS	C											
Intersection V/C	0.444											

Sequence

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



Intersection Level Of Service Report
Intersection 35: FOURTH STREET/I-10 WB OFF-RAMP

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

Intersection Setup

Name	4th St		4th St		Westbound	
	Northbound		Southbound			
Approach						
Lane Configuration					T T T	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	4th St		4th St		620	430
Base Volume Input [veh/h]	390	0	0	920		
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	5	0	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	390	0	0	925	620	448
Peak Hour Factor	0.8750	1.0000	1.0000	0.8841	0.9104	0.9104
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	111	0	0	262	170	123
Total Analysis Volume [veh/h]	446	0	0	1046	681	492
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		8	

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Split	Split
Signal Group	8	0	0	4	6	6
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	7	0	0	7	7	7
Maximum Green [s]	35	0	0	35	30	30
Amber [s]	3.6	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	0.0	0.0	1.0	1.0	1.0
Split [s]	70	0	0	70	50	50
Vehicle Extension [s]	2.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	7	0	0	0	0	0
Pedestrian Clearance [s]	8	0	0	0	0	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No			No	No	
Maximum Recall	Yes			Yes	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	71	71	39	39
g / C, Green / Cycle	0.59	0.59	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.12	0.29	0.19	0.31
s, saturation flow rate [veh/h]	3618	3618	3514	1587
c, Capacity [veh/h]	2154	2154	1152	520
d1, Uniform Delay [s]	11.19	13.80	33.57	39.22
k, delay calibration	0.50	0.50	0.04	0.29
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	0.79	0.18	19.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

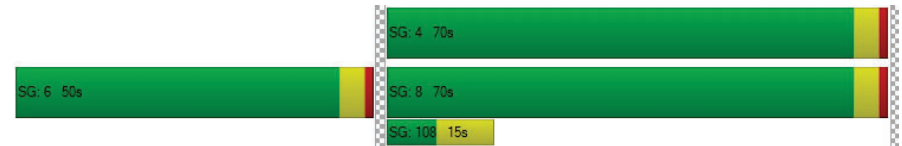
X, volume / capacity	0.21	0.49	0.59	0.95
d, Delay for Lane Group [s/veh]	11.41	14.59	33.75	58.76
Lane Group LOS	B	B	C	E
Critical Lane Group	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	2.76	8.04	7.78	15.91
50th-Percentile Queue Length [ft/ln]	69.10	201.04	194.46	397.68
95th-Percentile Queue Length [veh/ln]	4.98	12.69	12.35	22.45
95th-Percentile Queue Length [ft/ln]	124.38	317.31	308.81	561.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	14.59	33.75	58.76
Movement LOS	B			B	C	E
d_A, Approach Delay [s/veh]	11.41			14.59		44.24
Approach LOS	B			B		D
d_I, Intersection Delay [s/veh]				27.11		
Intersection LOS				C		
Intersection V/C				0.599		

Sequence

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



Intersection Level Of Service Report
Intersection 36: FOURTH STREET/I-10 EB ON-RAMP

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 55.3
Level Of Service: E
Volume to Capacity (v/c): 0.562

Intersection Setup

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Approach	Northbound			Southbound			Eastbound					
Lane Configuration	T T T			T T T			T T T					
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	4th St			Olympic Dr Olympic Blvd			Westbound					
Base Volume Input [veh/h]	10	350	480	480	790	240	30	520	30	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	5	0	0	0	11	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	350	480	485	790	240	30	531	30	0	0	0
Peak Hour Factor	0.9769	0.9769	0.9769	0.8948	0.8948	0.8948	0.8369	0.8369	0.8369	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	90	123	136	221	67	9	159	9	0	0	0
Total Analysis Volume [veh/h]	10	358	491	542	883	268	36	634	36	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			107			118		
Bicycle Volume [bicycles/h]	0			2			10			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	115.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	0	0
Auxiliary Signal Groups											
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	-	-
Minimum Green [s]	5	5	5	7	7	7	7	7	7	0	0
Maximum Green [s]	15	25	25	20	30	30	30	30	30	0	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
Split [s]	10	57	57	33	80	80	30	30	30	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	0
Pedestrian Clearance [s]	0	17	17	0	14	14	15	15	15	0	0
Rest in Walk		No			No			No			
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	0.0
Minimum Recall	No	Yes		No	Yes			No			
Maximum Recall	No	No		No	No			No			
Pedestrian Recall	No	No		No	No			No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	C	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	1	25	25	63	86	86	18	18	18
g / C, Green / Cycle	0.01	0.21	0.21	0.52	0.72	0.72	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.27	0.15	0.31	0.34	0.13	0.13	0.13
s, saturation flow rate [veh/h]	1810	1900	1800	3514	1900	1665	1886	1729	1673
c, Capacity [veh/h]	22	396	375	1842	1369	1199	287	263	255
d1, Uniform Delay [s]	58.81	46.26	47.44	16.05	6.77	7.09	49.69	49.68	49.77
k, delay calibration	0.04	0.33	0.50	0.04	0.50	0.50	0.04	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.33	19.54	156.62	0.03	0.98	1.33	3.30	3.54	3.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.90	1.31	0.29	0.43	0.47	0.87	0.87	0.88
d, Delay for Lane Group [s/veh]	64.15	65.80	204.06	16.09	7.76	8.42	52.99	53.22	53.76
Lane Group LOS	E	E	F	B	A	A	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.33	12.51	27.47	4.17	5.82	5.94	7.54	6.92	6.82
50th-Percentile Queue Length [ft/ln]	8.37	312.78	686.79	104.13	145.56	148.44	188.59	172.91	170.44
95th-Percentile Queue Length [veh/ln]	0.60	18.31	41.15	7.50	9.78	9.93	12.05	11.23	11.10
95th-Percentile Queue Length [ft/ln]	15.06	457.80	1028.87	187.43	244.49	248.35	301.19	280.74	277.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.15	65.80	204.06	16.09	7.98	8.42	52.99	53.30	53.76	0.00	0.00	0.00
Movement LOS	E	E	F	B	A	A	D	D	D			
d_A, Approach Delay [s/veh]	144.81			10.64			53.31			0.00		
Approach LOS	F			B			D			A		
d_I, Intersection Delay [s/veh]	55.26											
Intersection LOS	E											
Intersection V/C	0.562											

Sequence

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



Intersection Level Of Service Report

Intersection 38: FIFTH STREET/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 17.1
 Analysis Method: HCM 2010 Level Of Service: B
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.462

Intersection Setup

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Wilshire Blvd			Wilshire Blvd		
	170	140	170	30	60	30	30	690	80	110	960	60
Base Volume Input [veh/h]	170	140	170	30	60	30	30	690	80	110	960	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	5	0	0	0	0	6	0	1	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	170	140	175	30	60	30	30	696	80	111	965	60
Peak Hour Factor	0.9021	0.9021	0.9021	0.9500	0.9500	0.9500	0.9581	0.9581	0.9581	0.9341	0.9341	0.9341
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	39	48	8	16	8	8	182	21	30	258	16
Total Analysis Volume [veh/h]	188	155	194	32	63	32	31	726	83	119	1033	64
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	246			311			131			69		
Bicycle Volume [bicycles/h]	12			13			8			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	20	20	20	20	20	20	14	14	14	11	11	11
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Maximum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	26	26	26	26	26	61	61	61	61	61	61
g / C, Green / Cycle	0.26	0.26	0.26	0.26	0.26	0.61	0.61	0.61	0.61	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.16	0.08	0.13	0.03	0.06	0.06	0.20	0.06	0.16	0.29	0.30
s, saturation flow rate [veh/h]	1169	1900	1455	1184	1667	522	3618	1422	729	1900	1805
c, Capacity [veh/h]	298	494	378	277	433	291	2200	865	428	1155	1097
d1, Uniform Delay [s]	38.70	29.79	31.57	35.13	29.01	17.94	9.60	8.15	15.62	10.83	10.98
k, delay calibration	0.06	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.16	0.13	0.40	0.07	0.09	0.74	0.40	0.22	1.61	1.43	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

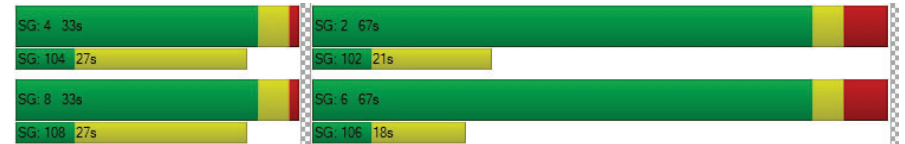
X, volume / capacity	0.63	0.31	0.51	0.12	0.22	0.11	0.33	0.10	0.28	0.48	0.50
d, Delay for Lane Group [s/veh]	39.86	29.92	31.97	35.19	29.11	18.68	10.00	8.37	17.23	12.26	12.57
Lane Group LOS	D	C	C	D	C	B	B	A	B	B	B
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.41	2.96	3.94	0.66	1.77	0.50	3.76	0.76	1.80	6.71	6.71
50th-Percentile Queue Length [ft/ln]	110.31	74.00	98.59	16.45	44.18	12.41	93.94	18.96	45.04	167.82	167.65
95th-Percentile Queue Length [veh/ln]	7.86	5.33	7.10	1.18	3.18	0.89	6.76	1.37	3.24	10.96	10.95
95th-Percentile Queue Length [ft/ln]	196.44	133.19	177.46	29.61	79.52	22.34	169.09	34.13	81.08	274.05	273.82

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.86	29.92	31.97	35.19	29.11	29.11	18.68	10.00	8.37	17.23	12.40	12.57
Movement LOS	D	C	C	D	C	C	B	B	A	B	B	B
d_A, Approach Delay [s/veh]	34.14			30.64			10.16			12.88		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.07											
Intersection LOS	B											
Intersection V/C	0.462											

Sequence

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



Intersection Level Of Service Report
Intersection 39: FIFTH STREET/ARIZONA AVENUE

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 26.8
Level Of Service: C
Volume to Capacity (v/c): 0.516

Intersection Setup

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Arizona Ave			Arizona Ave		
	100	330	50	20	140	30	20	450	50	50	290	90
Base Volume Input [veh/h]	100	330	50	20	140	30	20	450	50	50	290	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	5	0	0	0	1	0	-1	0	0	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	335	50	20	140	31	20	449	50	50	308	90
Peak Hour Factor	0.9182	0.9182	0.9182	0.8453	0.8453	0.8453	0.8628	0.8628	0.8628	0.8298	0.8298	0.8298
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	91	14	6	41	9	6	130	14	15	93	27
Total Analysis Volume [veh/h]	114	365	54	24	166	37	23	520	58	60	371	108
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207			137			115			71		
Bicycle Volume [bicycles/h]	37			26			11			11		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	8	2	8	4	6	4
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	55	45	55	55	45	55	45	55	45	55	45	55
Vehicle Extension [s]	3.0	2.0	3.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	16	14	16	16	14	16	14	16	14	16	14	16
Rest in Walk		No			No			No				No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		Yes			Yes			No				No
Maximum Recall		No			No			No				No
Pedestrian Recall		No			No			No				No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	49	49	49	49	49	42	42
g / C, Green / Cycle	0.49	0.49	0.49	0.49	0.49	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.10	0.11	0.12	0.02	0.11	0.35	0.40
s, saturation flow rate [veh/h]	1139	1900	1747	961	1774	1703	1353
c, Capacity [veh/h]	524	926	851	452	864	754	609
d1, Uniform Delay [s]	20.19	14.81	14.91	18.77	14.85	25.16	27.15
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.24	0.31
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.95	0.58	0.67	0.22	0.64	4.26	11.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

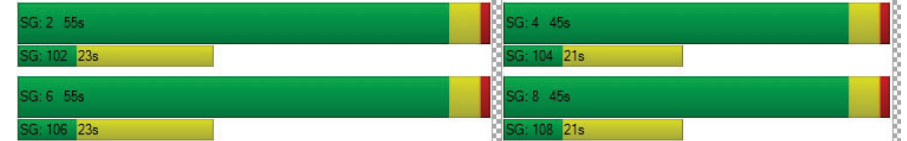
X, volume / capacity	0.22	0.23	0.24	0.05	0.23	0.80	0.88
d, Delay for Lane Group [s/veh]	21.14	15.40	15.58	18.99	15.49	29.42	38.48
Lane Group LOS	C	B	B	B	B	C	D
Critical Lane Group	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.87	2.83	2.76	0.37	2.71	12.61	13.89
50th-Percentile Queue Length [ft/ln]	46.71	70.76	69.02	9.14	67.77	315.20	347.20
95th-Percentile Queue Length [veh/ln]	3.36	5.09	4.97	0.66	4.88	18.43	20.00
95th-Percentile Queue Length [ft/ln]	84.07	127.36	124.23	16.45	121.99	460.79	499.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	21.14	15.47	15.58	18.99	15.49	15.49	29.42	29.42	29.42	38.48	38.48	38.48
Movement LOS	C	B	B	B	B	B	C	C	C	D	D	D
d_A, Approach Delay [s/veh]	16.69			15.86			29.42			38.48		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	26.80											
Intersection LOS	C											
Intersection V/C	0.516											

Sequence

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



Intersection Level Of Service Report

Intersection 40: FIFTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 23.5
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.408

Intersection Setup

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Santa Monica Blvd			Santa Monica Blvd		
	Base Volume Input [veh/h]	200	470	30	130	150	30	110	480	60	30	310
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	5	24	0	0	7	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	473	30	130	150	30	115	504	60	30	317	52
Peak Hour Factor	0.8773	0.8773	0.8773	0.8858	0.8858	0.8858	0.8553	0.8553	0.8553	0.8004	0.8004	0.8004
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	135	9	37	42	8	34	147	18	9	99	16
Total Analysis Volume [veh/h]	228	539	34	147	169	34	134	589	70	37	396	65
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	519			403			140			120		
Bicycle Volume [bicycles/h]	16			19			6			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	85.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	34	34	34	34	34	34	66	66	66	66	66	66
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	11	11	11	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	29	29	29	29	29	57	57	57	57	57	57
g / C, Green / Cycle	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.20	0.15	0.16	0.18	0.11	0.14	0.18	0.18	0.05	0.21	0.05
s, saturation flow rate [veh/h]	1142	1900	1819	840	1779	988	1900	1757	774	1900	1400
c, Capacity [veh/h]	283	559	535	194	524	505	1090	1008	424	1090	803
d1, Uniform Delay [s]	41.44	29.34	29.47	43.92	28.08	18.25	11.03	11.13	15.64	11.48	9.53
k, delay calibration	0.14	0.04	0.04	0.07	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.05	0.28	0.30	4.10	0.17	1.28	0.73	0.84	0.41	0.94	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.52	0.53	0.76	0.39	0.27	0.31	0.32	0.09	0.36	0.08
d, Delay for Lane Group [s/veh]	48.49	29.62	29.77	48.02	28.25	19.54	11.77	11.98	16.04	12.42	9.72
Lane Group LOS	D	C	C	D	C	B	B	B	B	B	A
Critical Lane Group	Yes	No	No	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.12	5.67	5.58	3.84	3.80	2.15	3.87	3.78	0.52	4.76	0.65
50th-Percentile Queue Length [ft/ln]	152.98	141.78	139.59	96.12	95.07	53.77	96.70	94.62	13.11	119.04	16.35
95th-Percentile Queue Length [veh/ln]	10.18	9.58	9.46	6.92	6.85	3.87	6.96	6.81	0.94	8.34	1.18
95th-Percentile Queue Length [ft/ln]	254.40	239.42	236.47	173.02	171.13	96.78	174.05	170.31	23.60	208.51	29.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.49	29.69	29.77	48.02	28.25	28.25	19.54	11.86	11.98	16.04	12.42	9.72
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	35.04			36.55			13.17			12.33		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	23.52											
Intersection LOS	C											
Intersection V/C	0.408											

Sequence

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



Intersection Level Of Service Report
Intersection 41: FIFTH STREET/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 23.2
Level Of Service: C
Volume to Capacity (v/c): 0.495

Intersection Setup

Name	5th St			5th St			Broadway			Broadway		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Broadway			Broadway		
	200	660	50	30	110	60	70	470	40	40	300	30
Base Volume Input [veh/h]	200	660	50	30	110	60	70	470	40	40	300	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	-3	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	200	663	50	30	110	60	70	467	40	40	300	30
Peak Hour Factor	0.9529	0.9529	0.9529	0.8975	0.8975	0.8975	0.9395	0.9395	0.9395	0.9045	0.9045	0.9045
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	174	13	8	31	17	19	124	11	11	83	8
Total Analysis Volume [veh/h]	210	696	52	33	123	67	75	497	43	44	332	33
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	357			276			62			70		
Bicycle Volume [bicycles/h]	45			37			1			9		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	2	8	2	6	4	6	4	2	4	8	6	8
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	64	36	64	64	36	64	36	64	36	64	36	64
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	12	12	12	12	11	12	11	12	11	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	31	31	31	31	31	60	60	60	60	60
g / C, Green / Cycle	0.31	0.31	0.31	0.31	0.31	0.60	0.60	0.60	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.18	0.20	0.20	0.05	0.11	0.07	0.29	0.05	0.17	0.02
s, saturation flow rate [veh/h]	1189	1900	1818	725	1718	1035	1850	876	1900	1427
c, Capacity [veh/h]	304	583	558	147	527	590	1112	442	1142	858
d1, Uniform Delay [s]	39.30	29.96	30.10	42.00	26.97	13.44	11.23	17.53	9.64	8.14
k, delay calibration	0.06	0.12	0.13	0.04	0.04	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.50	1.34	1.61	0.28	0.15	0.44	1.52	0.45	0.65	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.65	0.66	0.22	0.36	0.13	0.49	0.10	0.29	0.04
d, Delay for Lane Group [s/veh]	40.80	31.30	31.72	42.29	27.12	13.89	12.75	17.98	10.28	8.23
Lane Group LOS	D	C	C	D	C	B	B	B	B	A
Critical Lane Group	No	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.03	7.85	7.73	0.76	3.47	0.94	6.54	0.65	3.41	0.29
50th-Percentile Queue Length [ft/ln]	125.85	196.19	193.29	19.10	86.75	23.55	163.43	16.33	85.14	7.22
95th-Percentile Queue Length [veh/ln]	8.71	12.44	12.29	1.38	6.25	1.70	10.73	1.18	6.13	0.52
95th-Percentile Queue Length [ft/ln]	217.84	311.04	307.29	34.39	156.15	42.38	268.26	29.39	153.26	13.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.80	31.49	31.72	42.29	27.12	27.12	13.89	12.75	12.75	17.98	10.28	8.23
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	33.54			29.37			12.89			10.94		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	23.17											
Intersection LOS	C											
Intersection V/C	0.495											

Sequence

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



Intersection Level Of Service Report
Intersection 42: FIFTH STREET/COLORADO AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 27.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.546

Intersection Setup

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			25.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	5th St			5th St			Colorado Ave			Colorado Ave		
	14	930	130	60	40	120	0	0	0	6	260	50
Base Volume Input [veh/h]	14	930	130	60	40	120	0	0	0	6	260	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	933	130	60	40	120	0	0	0	6	260	50
Peak Hour Factor	0.9399	0.9090	0.9090	0.8478	0.8478	0.8478	1.0000	1.0000	1.0000	0.9301	0.7564	0.7564
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	257	36	18	12	35	0	0	0	2	86	17
Total Analysis Volume [veh/h]	15	1026	143	71	47	142	0	0	0	6	344	66
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	343			1			50			83		
Bicycle Volume [bicycles/h]	54			4			10			16		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	4	8	4	7	4	8	0	0	0	2	6	2
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	10	10	10	7	10	10	0	0	0	0	7	0
Maximum Green [s]	30	30	30	15	30	30	0	0	0	0	10	0
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0
All red [s]	2.0	2.0	2.0	1.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	55	42	55	13	55	42	0	0	0	0	45	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	7	7	7	0	7	7	0	0	0	0	7	0
Pedestrian Clearance [s]	5	19	5	0	5	19	0	0	0	0	15	0
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.6	3.6	3.6	2.6	3.6	3.6	0.0	0.0	0.0	0.0	2.6	0.0
Minimum Recall		No		No	No						No	
Maximum Recall		Yes		No	Yes						No	
Pedestrian Recall		No		No	No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	C
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	5.60	5.60	4.60	5.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.60	3.60	2.60	3.60	2.60
g_i, Effective Green Time [s]	39	39	6	49	40
g / C, Green / Cycle	0.39	0.39	0.06	0.49	0.40
(v / s)_i Volume / Saturation Flow Rate	0.28	0.11	0.04	0.12	0.22
s, saturation flow rate [veh/h]	3618	1338	1810	1620	1840
c, Capacity [veh/h]	1398	517	109	799	745
d1, Uniform Delay [s]	26.25	21.05	45.92	14.54	22.76
k, delay calibration	0.50	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.45	1.32	2.42	0.70	2.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

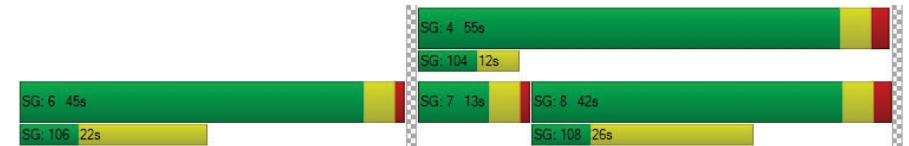
X, volume / capacity	0.73	0.28	0.65	0.24	0.55
d, Delay for Lane Group [s/veh]	29.70	22.38	48.34	15.24	25.68
Lane Group LOS	C	C	D	B	C
Critical Lane Group	Yes	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	10.79	2.45	1.77	2.50	7.80
50th-Percentile Queue Length [ft/ln]	269.80	61.34	44.30	62.47	195.12
95th-Percentile Queue Length [veh/ln]	16.18	4.42	3.19	4.50	12.39
95th-Percentile Queue Length [ft/ln]	404.49	110.41	79.73	112.45	309.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	29.70	22.38	48.34	15.24	15.24	0.00	0.00	0.00	0.00	25.68	25.68
Movement LOS		C	C	D	B	B					C	C
d_A, Approach Delay [s/veh]		28.80		24.28			0.00				25.68	
Approach LOS		C		C			A				C	
d_I, Intersection Delay [s/veh]							27.47					
Intersection LOS							C					
Intersection V/C							0.546					

Sequence

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



Intersection Level Of Service Report

Intersection 44: SIXTH STREET/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 14.3
 Level Of Service: B
 Volume to Capacity (v/c): 0.424

Intersection Setup

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	+			+			+			+		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Arizona Ave			Arizona Ave		
	40	110	40	20	100	10	20	370	30	40	390	50
Base Volume Input [veh/h]	40	110	40	20	100	10	20	370	30	40	390	50
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	0	0	-1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	110	40	20	100	10	20	369	30	40	399	50
Peak Hour Factor	0.9215	0.9215	0.9215	0.9000	0.9000	0.9000	0.9174	0.9174	0.9174	0.9183	0.9183	0.9183
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	30	11	6	28	3	5	101	8	11	109	14
Total Analysis Volume [veh/h]	53	119	43	22	111	11	22	402	33	44	434	54
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	55			30			34			36		
Bicycle Volume [bicycles/h]	5			30			3			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	6.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	37	37	37	37	37	37	63	63	63	63	63	63
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C	R
C, Cycle Length [s]	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	17	17	73	73	73
g / C, Green / Cycle	0.17	0.17	0.73	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.14	0.09	0.25	0.29	0.03
s, saturation flow rate [veh/h]	1566	1667	1822	1670	1575
c, Capacity [veh/h]	318	332	1374	1264	1156
d1, Uniform Delay [s]	39.32	36.95	4.69	4.73	3.67
k, delay calibration	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.95	0.33	0.65	0.86	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.43	0.33	0.38	0.05
d, Delay for Lane Group [s/veh]	40.27	37.28	5.34	5.59	3.74
Lane Group LOS	D	D	A	A	A
Critical Lane Group	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.02	3.12	2.85	3.05	0.26
50th-Percentile Queue Length [ft/ln]	125.44	78.08	71.23	76.23	6.62
95th-Percentile Queue Length [veh/ln]	8.69	5.62	5.13	5.49	0.48
95th-Percentile Queue Length [ft/ln]	217.28	140.54	128.21	137.22	11.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	40.27	40.27	40.27	37.28	37.28	37.28	5.34	5.34	5.34	5.59	5.59	3.74
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	40.27			37.28			5.34			5.41		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	14.35											
Intersection LOS	B											
Intersection V/C	0.424											

Sequence

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



Intersection Level Of Service Report

Intersection 45: SIXTH STREET/SANTA MONICA BOULEVARD

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.516

Intersection Setup

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TT			TT			TLR			TLR		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			35.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	6th St			6th St			Santa Monica Blvd			Santa Monica Blvd		
	50	90	70	60	90	30	20	540	40	60	340	40
Base Volume Input [veh/h]	50	90	70	60	90	30	20	540	40	60	340	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	0	0	0	0	24	0	0	10	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	97	70	60	90	30	20	564	40	60	350	42
Peak Hour Factor	0.7916	0.7916	0.7916	0.9068	0.9068	0.9068	0.8681	0.8681	0.8681	0.9554	0.9554	0.9554
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	31	22	17	25	8	6	162	12	16	92	11
Total Analysis Volume [veh/h]	63	123	88	66	99	33	23	650	46	63	366	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	90			62			44			30		
Bicycle Volume [bicycles/h]	8			10			5			6		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	92.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	32	32	32	32	32	32	68	68	68	68	68	68
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	13	13	13	14	14	14	12	12	12	12	12	12
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	23	23	23	23	64	64	64	64	64	64
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.64	0.64	0.64	0.64	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.06	0.14	0.06	0.08	0.03	0.38	0.03	0.09	0.21	0.03
s, saturation flow rate [veh/h]	1109	1549	1055	1600	919	1710	1374	715	1710	1351
c, Capacity [veh/h]	221	354	159	366	555	1093	878	362	1093	864
d1, Uniform Delay [s]	39.67	34.43	44.90	32.41	11.55	10.48	6.72	19.39	8.27	6.72
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.60	0.65	0.22	0.14	2.38	0.11	1.05	0.83	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.60	0.42	0.36	0.04	0.59	0.05	0.17	0.33	0.05
d, Delay for Lane Group [s/veh]	39.93	35.03	45.55	32.64	11.69	12.87	6.84	20.44	9.09	6.83
Lane Group LOS	D	D	D	C	B	B	A	C	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	1.41	4.53	1.60	2.66	0.26	8.19	0.37	1.05	3.57	0.35
50th-Percentile Queue Length [ft/ln]	35.34	113.34	40.11	66.46	6.61	204.78	9.16	26.16	89.18	8.77
95th-Percentile Queue Length [veh/ln]	2.54	8.03	2.89	4.78	0.48	12.88	0.66	1.88	6.42	0.63
95th-Percentile Queue Length [ft/ln]	63.61	200.64	72.19	119.62	11.89	322.12	16.50	47.09	160.52	15.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.93	35.03	35.03	45.55	32.64	32.64	11.69	12.87	6.84	20.44	9.09	6.83
Movement LOS	D	D	D	D	C	C	B	B	A	C	A	A
d_A, Approach Delay [s/veh]	36.15			36.94			12.44			10.39		
Approach LOS	D			D			B			B		
d_I, Intersection Delay [s/veh]	18.68											
Intersection LOS	B											
Intersection V/C	0.516											

Sequence

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



Intersection Level Of Service Report
Intersection 51: SEVENTH STREET/ARIZONA AVENUE

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

Intersection Setup

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Arizona Ave			Arizona Ave		
	50	200	20	20	150	30	20	370	30	30	400	30
Base Volume Input [veh/h]	50	200	20	20	150	30	20	369	30	30	409	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	-1	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	200	20	20	150	30	20	369	30	30	409	30
Peak Hour Factor	0.8626	0.8626	0.8626	0.9385	0.9385	0.9385	0.8974	0.8974	0.8974	0.9335	0.9335	0.9335
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	58	6	5	40	8	6	103	8	8	110	8
Total Analysis Volume [veh/h]	58	232	23	21	160	32	22	411	33	32	438	32
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	28			36			33			12		
Bicycle Volume [bicycles/h]	11			23			8			3		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	30	30	30	30	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	42	42	42	42	42	42	58	58	58	58	58	58
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	14	14	14	16	16	16	16	16	16
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	R	C
C, Cycle Length [s]	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	2.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	20	20	20	20	71	71	71
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.71	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.05	0.14	0.02	0.11	0.23	0.02	0.28
s, saturation flow rate [veh/h]	1156	1856	1127	1790	1848	1573	1811
c, Capacity [veh/h]	163	367	125	354	1350	1117	1324
d1, Uniform Delay [s]	44.69	37.27	46.26	36.01	5.45	4.29	5.74
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.89	0.23	0.48	0.63	0.05	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.69	0.17	0.54	0.32	0.03	0.38
d, Delay for Lane Group [s/veh]	45.18	38.16	46.49	36.49	6.07	4.34	6.57
Lane Group LOS	D	D	D	D	A	A	A
Critical Lane Group	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.42	5.89	0.52	4.27	3.01	0.18	3.69
50th-Percentile Queue Length [ft/ln]	35.57	147.25	12.94	106.67	75.18	4.54	92.31
95th-Percentile Queue Length [veh/ln]	2.56	9.87	0.93	7.65	5.41	0.33	6.65
95th-Percentile Queue Length [ft/ln]	64.03	246.76	23.29	191.36	135.32	8.18	166.15

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.18	38.16	38.16	46.49	36.49	36.49	6.07	6.07	4.34	6.57	6.57	6.57
Movement LOS	D	D	D	D	D	D	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	39.46			37.48			5.95			6.57		
Approach LOS	D			D			A			A		
d_I, Intersection Delay [s/veh]	17.67											
Intersection LOS	B											
Intersection V/C	0.415											

Sequence

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



Intersection Level Of Service Report
Intersection 52: SEVENTH STREET/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 20.4
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.428

Intersection Setup

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			25.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	7th St			7th St			Santa Monica Blvd			Santa Monica Blvd		
	80	250	60	80	180	30	30	550	10	40	420	70
Base Volume Input [veh/h]	80	250	60	80	180	30	30	550	10	40	420	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	24	0	0	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	250	60	80	180	30	30	574	10	40	432	70
Peak Hour Factor	0.9010	0.9010	0.9010	0.8750	0.8750	0.8750	0.9051	0.9051	0.9051	0.9496	0.9496	0.9496
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	69	17	23	51	9	8	159	3	11	114	18
Total Analysis Volume [veh/h]	89	277	67	91	206	34	33	634	11	42	455	74
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	59			55			20			20		
Bicycle Volume [bicycles/h]	4			12			5			6		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	98.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	8	8	8	4	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	25	25	25	25	25	25	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Split [s]	33	33	33	33	33	33	67	67	67	67	67	67
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	14	14	14	16	16	16	13	13	13	14	14	14
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	6.6	6.6	6.6	6.6	6.6	6.6
Minimum Recall		No			No			Yes			Yes	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	6.60	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	28	28	28	28	58	58	58	58	58	58
g / C, Green / Cycle	0.28	0.28	0.28	0.28	0.58	0.58	0.58	0.58	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.09	0.13	0.03	0.17	0.17	0.05	0.24	0.05
s, saturation flow rate [veh/h]	1148	1822	1051	1841	947	1900	1885	794	1900	1547
c, Capacity [veh/h]	248	516	171	521	484	1111	1102	453	1111	905
d1, Uniform Delay [s]	38.83	31.65	44.88	29.52	16.53	10.37	10.38	14.29	11.32	9.04
k, delay calibration	0.04	0.14	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	1.93	0.96	0.24	0.27	0.66	0.67	0.41	1.12	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.67	0.53	0.46	0.07	0.29	0.29	0.09	0.41	0.08
d, Delay for Lane Group [s/veh]	39.15	33.58	45.84	29.76	16.80	11.04	11.05	14.69	12.44	9.22
Lane Group LOS	D	C	D	C	B	B	B	B	B	A
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.03	7.58	2.28	4.79	0.47	3.58	3.56	0.56	5.52	0.72
50th-Percentile Queue Length [ft/ln]	50.82	189.60	57.12	119.75	11.87	89.42	89.02	14.11	138.05	17.92
95th-Percentile Queue Length [veh/ln]	3.66	12.10	4.11	8.38	0.85	6.44	6.41	1.02	9.38	1.29
95th-Percentile Queue Length [ft/ln]	91.47	302.51	102.82	209.48	21.36	160.96	160.24	25.40	234.40	32.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.15	33.58	33.58	45.84	29.76	29.76	16.80	11.04	11.05	14.69	12.44	9.22
Movement LOS	D	C	C	D	C	C	B	B	B	B	B	A
d_A, Approach Delay [s/veh]	34.72			34.18			11.32			12.19		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	20.36											
Intersection LOS	C											
Intersection V/C	0.428											

Sequence

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



Intersection Level Of Service Report

Intersection 56: LINCOLN BOULEVARD/WILSHIRE BOULEVARD

Control Type: Signalized Delay (sec / veh): 22.9
 Analysis Method: HCM 2010 Level Of Service: C
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.523

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			35.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Wilshire Blvd			Wilshire Blvd		
	250	430	140	50	290	40	20	790	100	170	920	40
Base Volume Input [veh/h]	250	430	140	50	290	40	20	790	100	170	920	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	10	0	3	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	430	140	50	290	40	20	790	100	173	926	40
Peak Hour Factor	0.9450	0.9450	0.9450	0.8040	0.8040	0.8040	0.9540	0.9540	0.9540	0.9385	0.9385	0.9385
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	114	37	16	90	12	5	207	26	46	247	11
Total Analysis Volume [veh/h]	265	455	148	62	361	50	21	828	105	184	987	43
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	99			95			24			43		
Bicycle Volume [bicycles/h]	13			7			2			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	16.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	1	4	4	4	3	2	3	1	6	6
Auxiliary Signal Groups			1,8						2,3			
Lead / Lag	Lead	-	-	Lag	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	15	30	30	30	15	30	15	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	40	12	28	28	28	12	48	12	12	60	60
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	7	7	7	0	7	0	0	7	7
Pedestrian Clearance [s]	0	21	0	21	21	21	0	18	0	0	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	No			No			Yes		No	Yes	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	35	35	35	23	23	23	44	44	44	55	55	55
g / C, Green / Cycle	0.35	0.35	0.35	0.23	0.23	0.23	0.44	0.44	0.44	0.55	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.22	0.24	0.10	0.07	0.11	0.11	0.04	0.23	0.07	0.21	0.27	0.03
s, saturation flow rate [veh/h]	1223	1900	1525	939	1900	1795	575	3618	1487	869	3618	1443
c, Capacity [veh/h]	441	670	538	78	442	418	218	1589	653	480	2008	801
d1, Uniform Delay [s]	26.11	27.54	23.19	49.97	33.07	33.18	28.88	20.40	16.92	12.89	13.61	10.20
k, delay calibration	0.50	0.16	0.04	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.94	1.79	0.10	6.48	0.29	0.32	0.88	1.23	0.53	2.32	0.86	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.68	0.27	0.79	0.47	0.48	0.10	0.52	0.16	0.38	0.49	0.05
d, Delay for Lane Group [s/veh]	32.06	29.33	23.29	56.45	33.36	33.50	29.76	21.62	17.45	15.21	14.47	10.33
Lane Group LOS	C	C	C	E	C	C	C	C	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.41	9.36	2.49	1.67	4.30	4.18	0.44	7.09	1.53	2.21	6.53	0.44
50th-Percentile Queue Length [ft/ln]	135.25	233.88	62.17	41.77	107.53	104.58	11.06	177.36	38.29	55.14	163.15	10.97
95th-Percentile Queue Length [veh/ln]	9.22	14.37	4.48	3.01	7.70	7.53	0.80	11.46	2.76	3.97	10.72	0.79
95th-Percentile Queue Length [ft/ln]	230.61	359.28	111.90	75.18	192.56	188.25	19.90	286.57	68.92	99.25	267.89	19.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	32.06	29.33	23.29	56.45	33.42	33.50	29.76	21.62	17.45	15.21	14.47	10.33
Movement LOS	C	C	C	E	C	C	C	C	B	B	B	B
d_A, Approach Delay [s/veh]	29.13		36.45			21.34		14.44				
Approach LOS	C		D			C		B				
d_I, Intersection Delay [s/veh]	22.92											
Intersection LOS	C											
Intersection V/C	0.523											

Sequence

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



Intersection Level Of Service Report

Intersection 57: LINCOLN BOULEVARD/ARIZONA AVENUE

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 30.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.568

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Arizona Ave			Arizona Ave		
Base Volume Input [veh/h]	240	710	40	10	530	20	20	250	240	30	180	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	3	0	-1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	246	710	40	10	530	23	20	249	240	30	180	40
Peak Hour Factor	0.9488	0.9488	0.9488	0.8445	0.8445	0.8445	0.9409	0.9409	0.9409	0.9152	0.9152	0.9152
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	187	11	3	157	7	5	66	64	8	49	11
Total Analysis Volume [veh/h]	259	748	42	12	628	27	21	265	255	33	197	44
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	76			47			26			32		
Bicycle Volume [bicycles/h]	23			15			2			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	69.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	6	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lag	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	56	56	12	56	56	32	32	32	32	32	32
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	7	7	7
Pedestrian Clearance [s]	0	14	14	0	14	14	18	18	18	18	18	18
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	63	57	57	63	51	51	27	27	27	27
g / C, Green / Cycle	0.63	0.57	0.57	0.63	0.51	0.51	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.27	0.21	0.21	0.02	0.17	0.17	0.32	0.17	0.33	0.03
s, saturation flow rate [veh/h]	955	1900	1849	777	1900	1862	893	1461	705	1508
c, Capacity [veh/h]	633	1080	1052	522	973	954	283	400	234	412
d1, Uniform Delay [s]	8.57	11.77	11.80	7.38	14.39	14.42	32.59	31.97	31.51	27.19
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.48	0.07	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.95	0.97	1.01	0.08	0.94	0.97	55.47	1.14	54.65	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.37	0.37	0.02	0.34	0.34	1.01	0.64	0.98	0.11
d, Delay for Lane Group [s/veh]	10.53	12.74	12.81	7.46	15.34	15.39	88.06	33.12	86.17	27.23
Lane Group LOS	B	B	B	A	B	B	F	C	F	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.54	4.88	4.81	0.10	4.50	4.46	10.11	5.40	8.02	0.78
50th-Percentile Queue Length [ft/ln]	63.56	122.12	120.34	2.49	112.56	111.40	252.64	134.95	200.43	19.45
95th-Percentile Queue Length [veh/ln]	4.58	8.51	8.41	0.18	7.98	7.92	15.42	9.21	12.66	1.40
95th-Percentile Queue Length [ft/ln]	114.41	212.74	210.30	4.48	199.56	197.95	385.42	230.20	316.52	35.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	10.53	12.77	12.81	7.46	15.36	15.39	88.06	88.06	33.12	86.17	86.17	27.23
Movement LOS	B	B	B	A	B	B	F	F	C	F	F	C
d_A, Approach Delay [s/veh]	12.22			15.22			62.16			76.70		
Approach LOS	B			B			E			E		
d_I, Intersection Delay [s/veh]	30.67											
Intersection LOS	C											
Intersection V/C	0.568											

Sequence

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



Intersection Level Of Service Report
Intersection 58: LINCOLN BOULEVARD/SANTA MONICA BOULEVARD

Control Type: Signalized Delay (sec / veh): 44.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.669

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Santa Monica Blvd			Santa Monica Blvd		
	120	810	180	130	560	40	20	530	220	180	300	260
Base Volume Input [veh/h]	120	810	180	130	560	40	20	530	220	180	300	260
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	-3	6	0	0	0	0	0	15	9	0	15	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	816	180	130	560	40	20	545	229	180	315	260
Peak Hour Factor	0.9725	0.9725	0.9725	0.9455	0.9455	0.9455	0.8994	0.8994	0.8994	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	210	46	34	148	11	6	151	64	50	87	72
Total Analysis Volume [veh/h]	120	839	185	137	592	42	22	606	255	198	347	286
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	77			106			66			52		
Bicycle Volume [bicycles/h]	12			10			3			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	64.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	8	7	4	4	2	2	2	1	6	6
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	7	7	7	7
Maximum Green [s]	15	30	30	15	30	30	30	30	30	15	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	12	47	47	12	47	47	27	27	27	14	41	41
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	14	14	0	13	13	13	13	13	0	15	15
Rest in Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Minimum Recall	No	Yes		No	Yes			No		No	No	
Maximum Recall	No	No		No	No			No		No	No	
Pedestrian Recall	No	No		No	No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.60	2.60	0.00	2.60	2.60	2.60	2.60	2.60	0.00	2.60	2.60
g_i, Effective Green Time [s]	54	43	43	54	43	43	22	22	22	36	36	36
g / C, Green / Cycle	0.54	0.43	0.43	0.54	0.43	0.43	0.22	0.22	0.22	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.12	0.28	0.28	0.18	0.17	0.17	0.02	0.24	0.26	0.19	0.18	0.20
s, saturation flow rate [veh/h]	978	1900	1742	777	1900	1838	993	1900	1574	1036	1900	1453
c, Capacity [veh/h]	549	818	750	405	821	794	130	423	350	340	689	527
d1, Uniform Delay [s]	11.84	22.45	22.67	14.57	19.41	19.45	45.38	38.89	38.89	25.68	24.86	25.30
k, delay calibration	0.22	0.50	0.50	0.50	0.50	0.50	0.04	0.25	0.31	0.50	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.41	3.90	4.55	2.25	1.40	1.47	0.23	52.01	92.63	7.14	0.21	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

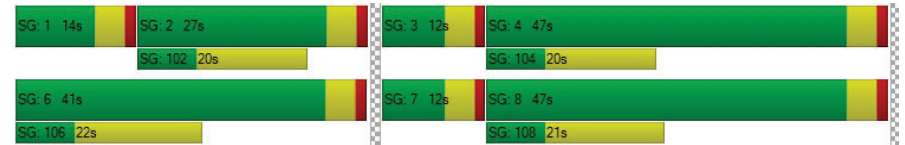
X, volume / capacity	0.22	0.65	0.66	0.34	0.39	0.39	0.17	1.07	1.17	0.58	0.50	0.54
d, Delay for Lane Group [s/veh]	12.25	26.35	27.22	16.83	20.80	20.92	45.61	90.90	131.51	32.82	25.07	25.66
Lane Group LOS	B	C	C	B	C	C	D	F	F	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.32	10.35	9.93	1.70	5.30	5.20	0.53	16.27	17.43	3.97	6.33	5.33
50th-Percentile Queue Length [ft/ln]	32.92	258.71	248.23	42.51	132.45	130.11	13.29	406.82	435.86	99.14	158.17	133.15
95th-Percentile Queue Length [veh/ln]	2.37	15.62	15.10	3.06	9.07	8.95	0.96	23.78	26.31	7.14	10.45	9.11
95th-Percentile Queue Length [ft/ln]	59.25	390.61	377.42	76.52	226.82	223.65	23.93	594.45	657.63	178.45	261.30	227.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.25	26.67	27.22	16.83	20.86	20.92	45.61	101.17	131.51	32.82	25.07	25.66
Movement LOS	B	C	C	B	C	C	D	F	F	C	C	C
d_A, Approach Delay [s/veh]	25.25			20.14			108.55			27.12		
Approach LOS	C			C			F			C		
d_I, Intersection Delay [s/veh]	44.86											
Intersection LOS	D											
Intersection V/C	0.669											

Sequence

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



Intersection Level Of Service Report
Intersection 59: LINCOLN BOULEVARD/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 38.3
Level Of Service: D
Volume to Capacity (v/c): 0.643

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TTT			TTT			TTT			TTT		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Broadway			Broadway		
Base Volume Input [veh/h]	210	910	70	40	920	60	90	230	170	80	180	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	9	0	0	0	-3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	210	913	70	40	929	60	90	230	167	80	180	60
Peak Hour Factor	0.9221	0.9221	0.9221	0.9192	0.9192	0.9192	0.9657	0.9657	0.9657	0.9267	0.9267	0.9267
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	248	19	11	253	16	23	60	43	22	49	16
Total Analysis Volume [veh/h]	228	990	76	44	1011	65	93	238	173	86	194	65
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	128			168			130			86		
Bicycle Volume [bicycles/h]	51			51			7			5		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	66.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	2	6	4	6	4	2	4	1	6	8
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	5	7	7	7	7	7	7	7	7	5	7	7
Maximum Green [s]	15	30	25	25	30	25	30	25	30	7	25	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	5.0	1.0	1.0	5.0
Split [s]	15	60	28	40	45	40	45	28	45	12	40	60
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	0	7	7	7	7	7	7	7	7	0	7	7
Pedestrian Clearance [s]	0	16	17	17	16	17	16	17	16	0	17	16
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	6.6	2.6	2.6	6.6	2.6	6.6	2.6	6.6	2.6	2.6	6.6
Minimum Recall	No	Yes			Yes			No		Yes	No	
Maximum Recall	No	No			No			No		No	No	
Pedestrian Recall	No	No			No			No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.60	8.60	8.60	8.60	8.60	8.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	6.60	6.60	6.60	6.60	6.60	2.60	2.60	2.60	0.00	2.60
g_i, Effective Green Time [s]	11	51	51	36	36	36	26	26	26	35	35
g / C, Green / Cycle	0.11	0.51	0.51	0.36	0.36	0.36	0.26	0.26	0.26	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.13	0.28	0.29	0.08	0.29	0.29	0.08	0.13	0.13	0.20	0.05
s, saturation flow rate [veh/h]	1810	1900	1806	537	1900	1817	1161	1900	1352	1404	1366
c, Capacity [veh/h]	194	978	930	148	688	658	113	488	347	499	482
d1, Uniform Delay [s]	44.65	16.42	16.61	40.05	28.51	28.79	49.23	31.57	31.66	24.85	21.97
k, delay calibration	0.24	0.50	0.50	0.50	0.50	0.50	0.04	0.04	0.04	0.50	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	102.83	2.23	2.50	5.03	9.01	10.36	5.62	0.28	0.41	4.50	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.18	0.55	0.57	0.30	0.79	0.81	0.82	0.49	0.50	0.56	0.13
d, Delay for Lane Group [s/veh]	147.48	18.65	19.11	45.08	37.52	39.15	54.84	31.85	32.08	29.35	22.02
Lane Group LOS	F	B	B	D	D	D	D	C	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	10.29	8.58	8.53	1.21	13.01	13.05	2.47	4.80	3.52	5.51	1.02
50th-Percentile Queue Length [ft/ln]	257.21	214.55	213.34	30.25	325.18	326.37	61.75	120.11	87.88	137.84	25.49
95th-Percentile Queue Length [veh/ln]	16.54	13.39	13.32	2.18	18.92	18.98	4.45	8.40	6.33	9.36	1.84
95th-Percentile Queue Length [ft/ln]	413.50	334.66	333.11	54.45	473.05	474.51	111.15	209.98	158.18	234.11	45.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	147.48	18.86	19.11	45.08	38.27	39.15	54.84	31.85	32.08	29.35	29.35	22.02
Movement LOS	F	B	B	D	D	D	D	C	C	C	C	C
d_A, Approach Delay [s/veh]	41.54			38.59			36.17			27.97		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	38.26											
Intersection LOS	D											
Intersection V/C	0.643											

Sequence

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



Intersection Level Of Service Report

Intersection 60: LINCOLN BOULEVARD/COLORADO AVENUE

Control Type: Signalized Delay (sec / veh): 50.9
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.766

Intersection Setup

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T			T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lincoln Blvd			Lincoln Blvd			Colorado Ave			Colorado Ave		
	210	1020	180	20	1070	70	6	130	310	66	290	160
Base Volume Input [veh/h]	210	1020	180	20	1070	70	6	130	310	66	290	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	1023	180	20	1076	70	6	130	310	66	290	160
Peak Hour Factor	0.9479	0.9479	0.9479	0.9597	0.9597	0.9597	0.8750	0.8464	0.8464	0.9427	0.8888	0.8888
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	270	47	5	280	18	2	38	92	18	82	45
Total Analysis Volume [veh/h]	228	1079	190	21	1121	73	7	154	366	70	326	180
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			15			36			25		
Bicycle Volume [bicycles/h]	22			15			10			4		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	5	2	2	1	6	6	5	4	3	1	8	8
Auxiliary Signal Groups									2			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	7	7	7	7	7	7	0	7	7	7
Maximum Green [s]	15	30	30	15	30	30	15	40	0	15	40	40
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	0	30	30	0	30	30	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	7	0	7	7	0	7	0	7	7	7
Pedestrian Clearance [s]	0	15	15	0	15	15	0	18	0	0	18	18
Rest in Walk	No	No	No	No	No	No	No	No	No	No	No	No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6
Minimum Recall	No	No	No	No	No	No	No	No	No	No	No	No
Maximum Recall	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Pedestrian Recall	No	No	No	No	No	No	No	No	No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	98	98	98	98	98	98	98	98
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	14	41	41	3	30	30	40	40
g / C, Green / Cycle	0.14	0.42	0.42	0.03	0.31	0.31	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.13	0.34	0.35	0.01	0.32	0.32	0.32	0.29
s, saturation flow rate [veh/h]	1810	1900	1759	1810	1900	1832	1638	1770
c, Capacity [veh/h]	261	793	734	60	582	561	669	723
d1, Uniform Delay [s]	41.03	25.18	25.71	46.31	33.95	33.95	25.09	23.98
k, delay calibration	0.22	0.50	0.50	0.04	0.46	0.47	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.70	9.02	11.67	1.30	45.24	51.48	8.64	5.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

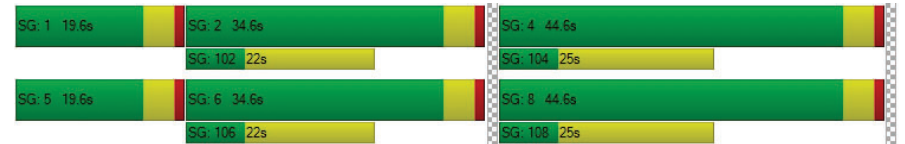
X, volume / capacity	0.87	0.81	0.85	0.35	1.04	1.05	0.78	0.70
d, Delay for Lane Group [s/veh]	57.73	34.20	37.39	47.61	79.19	85.43	33.73	29.55
Lane Group LOS	E	C	D	D	F	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	6.53	14.66	14.84	0.52	20.73	20.96	11.66	10.47
50th-Percentile Queue Length [ft/ln]	163.23	366.43	371.10	12.99	518.13	523.98	291.54	261.76
95th-Percentile Queue Length [veh/ln]	10.72	20.94	21.16	0.94	28.85	29.42	17.26	15.78
95th-Percentile Queue Length [ft/ln]	268.00	523.40	529.07	23.38	721.17	735.62	431.55	394.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.73	35.48	37.39	47.61	82.08	85.43	0.00	33.73	33.73	0.00	29.55	29.55
Movement LOS	E	D	D	D	F	F		C	C		C	C
d_A, Approach Delay [s/veh]	39.11			81.68			33.73			29.55		
Approach LOS	D			F			C			C		
d_I, Intersection Delay [s/veh]	50.91											
Intersection LOS	D											
Intersection V/C	0.766											

Sequence

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



Intersection Level Of Service Report
Intersection 61: LINCOLN BOULEVARD/OLYMPIC/I-10 WB OFF-RAMP

Control Type: Signalized
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes
 Delay (sec / veh): 63.7
 Level Of Service: E
 Volume to Capacity (v/c): 0.866

Intersection Setup

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			0.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			Yes			Yes		

Volumes

Name	Li-Ca			Lincoln Blvd			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	290	710	0	1460	30	0	0	0	0	750	660
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	0	6	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	719	0	1466	30	0	0	0	0	750	660	780
Peak Hour Factor	0.8706	0.8706	1.0000	1.0000	0.9494	0.9494	1.0000	1.0000	1.0000	0.9089	0.9089	0.9089
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	206	0	386	8	0	0	0	0	206	182	215
Total Analysis Volume [veh/h]	333	826	0	1544	32	0	0	0	0	825	726	858
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			22			34		
Bicycle Volume [bicycles/h]	4			0			10			21		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	6	0	0	0	4	4	4
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	Lag	-	-
Minimum Green [s]	7	7	0	0	7	7	0	0	0	7	7	7
Maximum Green [s]	15	30	0	0	30	30	0	0	0	30	30	30
Amber [s]	3.6	3.6	0.0	0.0	3.6	3.6	0.0	0.0	0.0	3.6	3.6	3.6
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0
Split [s]	27	75	0	0	48	48	0	0	0	45	45	45
Vehicle Extension [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
Walk [s]	0	7	0	0	7	7	0	0	0	7	7	7
Pedestrian Clearance [s]	0	16	0	0	7	7	0	0	0	22	22	22
Rest in Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.6	0.0	0.0	2.6	2.6	0.0	0.0	0.0	2.6	2.6	2.6
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	22	70	43	43	40	40	40	40
g / C, Green / Cycle	0.19	0.59	0.36	0.36	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.29	0.28	0.34	0.33	0.35	0.39
s, saturation flow rate [veh/h]	1810	3618	3618	1877	1810	1868	1587	1573
c, Capacity [veh/h]	337	2123	1310	680	609	629	534	529
d1, Uniform Delay [s]	48.62	13.26	34.39	33.88	39.77	39.37	39.77	39.77
k, delay calibration	0.39	0.50	0.50	0.50	0.45	0.43	0.49	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	40.30	0.54	5.27	8.34	37.73	28.62	52.22	92.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	0.39	0.80	0.77	1.01	0.98	1.05	1.16
d, Delay for Lane Group [s/veh]	88.92	13.80	39.65	42.22	77.50	67.99	91.99	132.7
Lane Group LOS	F	B	D	D	F	E	F	F
Critical Lane Group	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	13.66	5.98	14.56	14.98	23.39	22.04	22.66	28.45
50th-Percentile Queue Length [ft/ln]	341.48	149.61	364.09	374.50	584.7	550.9	566.5	711.3
95th-Percentile Queue Length [veh/ln]	19.72	10.00	20.82	21.33	31.58	29.74	31.49	40.95
95th-Percentile Queue Length [ft/ln]	493.01	249.91	520.56	533.19	789.5	743.4	787.2	1023.

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	88.92	13.80	0.00	0.00	40.47	42.22	0.00	0.00	0.00	74.93	78.53	121.36
Movement LOS	F	B			D	D				E	E	F
d_A, Approach Delay [s/veh]	35.38		40.51		0.00		92.56					
Approach LOS	D		D		A		F					
d_I, Intersection Delay [s/veh]	63.73											
Intersection LOS	E											
Intersection V/C	0.866											

Sequence

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



Intersection Level Of Service Report
Intersection 62: LINCOLN BOULEVARD/I-10 EB ON-RAMP

Control Type: Signalized Delay (sec / veh): 59.0
 Analysis Method: HCM 2010 Level Of Service: E
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.901

Intersection Setup

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			35.00			0.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Li-Ca			Li-Ca			Ol-Ca			Olympic Blvd		
	Base Volume Input [veh/h]	0	960	660	900	1300	0	80	90	450	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	-3	9	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	969	660	897	1309	0	80	90	450	0	0	0
Peak Hour Factor	1.0000	0.9015	0.9015	0.9313	0.9313	1.0000	0.8717	0.8717	0.8717	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	269	183	241	351	0	23	26	129	0	0	0
Total Analysis Volume [veh/h]	0	1075	732	963	1406	0	92	103	516	0	0	0
Presence of On-Street Parking	No	No	No	No	No	No	No	No	No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			21			44		
Bicycle Volume [bicycles/h]	0			1			10			10		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	30.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Permiss	Protecte	Permiss
Signal Group	0	8	8	7	4	0	2	2	2	0	0	0
Auxiliary Signal Groups	-	-	-	-	-	-	-	-	-	-	-	-
Lead / Lag	-	-	-	Lag	-	-	Lag	-	-	-	-	-
Minimum Green [s]	0	7	7	7	7	0	7	7	7	0	0	0
Maximum Green [s]	0	30	30	30	30	0	30	30	30	0	0	0
Amber [s]	0.0	3.6	3.6	3.6	3.6	0.0	3.6	3.6	3.6	0.0	0.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0
Split [s]	0	45	45	45	90	0	30	30	30	0	0	0
Vehicle Extension [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
Walk [s]	0	7	7	0	7	0	5	5	5	0	0	0
Pedestrian Clearance [s]	0	12	12	0	8	0	25	25	25	0	0	0
Rest in Walk		No			No			No				
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	2.6	2.6	2.6	2.6	0.0	2.6	2.6	2.6	0.0	0.0	0.0
Minimum Recall		No		Yes	Yes			No				
Maximum Recall		No		No	No			No				
Pedestrian Recall		No		No	No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	R	L	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
g_i, Effective Green Time [s]	39	39	39	42	85	25	25	25
g / C, Green / Cycle	0.33	0.33	0.33	0.35	0.71	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.25	0.30	0.30	0.27	0.39	0.06	0.05	0.33
s, saturation flow rate [veh/h]	3618	1506	1506	3514	3618	1816	1729	1579
c, Capacity [veh/h]	1177	490	490	1222	2574	385	366	334
d1, Uniform Delay [s]	36.39	39.00	39.00	35.15	8.17	39.44	39.43	47.28
k, delay calibration	0.04	0.04	0.04	0.50	0.50	0.04	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.40	3.20	3.20	5.19	0.84	0.13	0.14	258.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.92	0.92	0.79	0.55	0.26	0.26	1.54
d, Delay for Lane Group [s/veh]	36.79	42.20	42.20	40.34	9.00	39.57	39.57	306.18
Lane Group LOS	D	D	D	D	A	D	D	F
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	11.73	12.94	12.94	13.39	8.04	2.47	2.34	33.87
50th-Percentile Queue Length [ft/ln]	293.26	323.41	323.41	334.63	200.91	61.67	58.52	846.79
95th-Percentile Queue Length [veh/ln]	17.35	18.84	18.84	19.39	12.69	4.44	4.21	52.50
95th-Percentile Queue Length [ft/ln]	433.68	470.88	470.88	484.63	317.15	111.00	105.33	1312.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	36.79	42.20	40.34	9.00	0.00	39.57	39.57	306.18	0.00	0.00	0.00
Movement LOS		D	D	D	A		D	D	F			
d_A, Approach Delay [s/veh]		39.49			21.74			233.06			0.00	
Approach LOS		D			C			F			A	
d_I, Intersection Delay [s/veh]		59.05										
Intersection LOS		E										
Intersection V/C		0.901										

Sequence

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



Intersection Level Of Service Report
Intersection 170: OCEAN AVENUE/BROADWAY

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes

Delay (sec / veh): 60.5
Level Of Service: E
Volume to Capacity (v/c): 0.666

Intersection Setup

Name	Ocean Ave		Ocean Ave		Broadway	
	Northbound		Southbound		Westbound	
Approach						
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Ocean Ave		Ocean Ave		Broadway	
	980	210	130	900	250	130
Base Volume Input [veh/h]	980	210	130	900	250	130
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	0	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1006	210	130	902	250	130
Peak Hour Factor	0.8959	0.8959	0.7975	0.7975	0.8707	0.8707
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	281	59	41	283	72	37
Total Analysis Volume [veh/h]	1123	234	163	1131	287	149
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	1493		1112		833	
Bicycle Volume [bicycles/h]	62		14		32	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	94.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Protected
Signal Group	8	8	4	4	1	2
Auxiliary Signal Groups						
Lead / Lag	-	-	Lag	-	Lead	-
Minimum Green [s]	7	7	7	7	5	7
Maximum Green [s]	54	54	30	30	30	30
Amber [s]	3.6	3.6	3.6	3.6	3.6	3.6
All red [s]	5.0	5.0	5.0	5.0	1.0	1.0
Split [s]	79	79	79	79	22	22
Vehicle Extension [s]	2.0	2.0	2.0	2.0	2.0	2.0
Walk [s]	7	7	7	7	7	0
Pedestrian Clearance [s]	12	12	10	10	15	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	6.6	6.6	6.6	6.6	2.6	2.6
Minimum Recall	Yes			Yes	No	No
Maximum Recall	No			No	No	No
Pedestrian Recall	No			No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	6.60	6.60	6.60	6.60	2.60	2.60
g_i, Effective Green Time [s]	69	69	69	69	17	17
g / C, Green / Cycle	0.69	0.69	0.69	0.69	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.31	0.17	0.32	0.31	0.34	0.20
s, saturation flow rate [veh/h]	3618	1353	508	3618	832	734
c, Capacity [veh/h]	2509	938	342	2509	145	128
d1, Uniform Delay [s]	6.81	5.68	16.10	6.83	41.27	41.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.15
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	0.64	4.68	0.59	462.90	96.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.25	0.48	0.45	1.98	1.16
d, Delay for Lane Group [s/veh]	7.39	6.32	20.78	7.42	504.17	137.71
Lane Group LOS	A	A	C	A	F	F
Critical Lane Group	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.78	1.76	2.87	4.83	22.17	6.51
50th-Percentile Queue Length [ft/ln]	119.51	43.92	71.72	120.76	554.16	162.78
95th-Percentile Queue Length [veh/ln]	8.37	3.16	5.16	8.44	37.11	11.38
95th-Percentile Queue Length [ft/ln]	209.16	79.05	129.10	210.88	927.67	284.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.39	6.32	20.78	7.42	504.17	137.71
Movement LOS	A	A	C	A	F	F
d_A, Approach Delay [s/veh]	7.21		9.10		378.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	60.50					
Intersection LOS	E					
Intersection V/C	0.666					

Sequence

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



**Intersection Level Of Service Report
Intersection 514: Main St & Olympic Dr**

Control Type: Signalized
Analysis Method: HCM 2010
Analysis Period: 15 minutes
Delay (sec / veh): 98.8
Level Of Service: F
Volume to Capacity (v/c): 0.667

Intersection Setup

Name	Main St			Olympic Blvd			Olympic Dr Olympic Blvd					
	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			30.00			30.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Main St						Olympic Blvd			Olympic Dr Olympic Blvd		
	20	360	260	140	160	0	30	330	0	160	300	20
Base Volume Input [veh/h]	20	360	260	140	160	0	30	330	0	160	300	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	10	19	0	0	1	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	364	260	150	179	0	30	331	0	160	300	20
Peak Hour Factor	0.8900	0.8900	0.8900	0.8891	0.8891	0.8891	0.9545	0.9545	0.9545	0.8539	0.8539	0.8539
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	102	73	42	50	0	8	87	0	47	88	6
Total Analysis Volume [veh/h]	22	409	292	169	201	0	31	347	0	187	351	23
Presence of On-Street Parking	No		No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	34			213			108			165		
Bicycle Volume [bicycles/h]	4			3			61			31		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	8	0	7	4	0	0	2	0	0	6	0	
Auxiliary Signal Groups													
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	7	0	5	7	0	0	7	0	0	7	0	
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0	
Amber [s]	3.6	3.6	0.0	3.6	3.6	0.0	0.0	3.6	0.0	0.0	3.6	0.0	
All red [s]	1.0	5.0	0.0	1.0	5.0	0.0	0.0	5.0	0.0	0.0	5.0	0.0	
Split [s]	10	55	0	10	55	0	0	25	0	0	25	0	
Vehicle Extension [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0	
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0	
Rest in Walk		No			No			No			No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	
I2, Clearance Lost Time [s]	2.6	6.6	0.0	2.6	6.6	0.0	0.0	6.6	0.0	0.0	6.6	0.0	
Minimum Recall	No	Yes		No	Yes			No			No		
Maximum Recall	No	No		No	No			No			No		
Pedestrian Recall	No	Yes		No	Yes			Yes			Yes		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	6.60	0.00	6.60	6.60	6.60	6.60	6.60
g_i, Effective Green Time [s]	56	47	56	50	16	16	16	16
g / C, Green / Cycle	0.63	0.52	0.63	0.55	0.18	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.42	0.19	0.11	0.03	0.18	0.18	0.21
s, saturation flow rate [veh/h]	1251	1678	903	1900	1024	1900	1050	1814
c, Capacity [veh/h]	838	868	426	1048	80	347	80	331
d1, Uniform Delay [s]	6.49	18.01	13.76	10.13	45.02	36.81	45.02	36.81
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	0.05
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.00	7.97	2.75	0.41	1.13	13.95	603.81	62.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

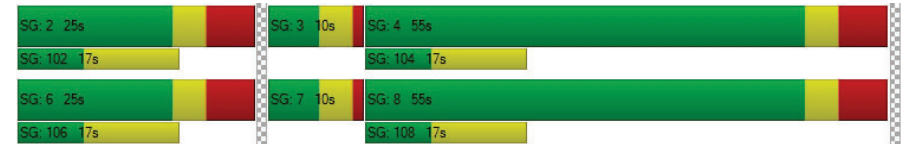
X, volume / capacity	0.03	0.81	0.40	0.19	0.39	1.00	2.33	1.13
d, Delay for Lane Group [s/veh]	6.50	25.98	16.51	10.54	46.16	50.76	648.83	99.37
Lane Group LOS	A	C	B	B	D	F	F	F
Critical Lane Group	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.14	12.73	1.53	1.99	0.71	8.79	15.19	12.77
50th-Percentile Queue Length [ft/ln]	3.49	318.23	38.21	49.74	17.78	219.73	379.67	319.29
95th-Percentile Queue Length [veh/ln]	0.25	18.58	2.75	3.58	1.28	13.66	27.02	19.76
95th-Percentile Queue Length [ft/ln]	6.29	464.50	68.77	89.54	32.00	341.46	675.61	493.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.50	25.98	25.98	16.51	10.54	10.54	46.16	50.76	50.76	648.83	99.37	99.37
Movement LOS	A	C	C	B	B	B	D	F	D	F	F	F
d_A, Approach Delay [s/veh]	25.38			13.27			50.38			282.53		
Approach LOS	C			B			D			F		
d_I, Intersection Delay [s/veh]	98.82											
Intersection LOS	F											
Intersection V/C	0.667											

Sequence

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



Intersection Level Of Service Report
Intersection 1162530: OCEAN AVENUE/OLYMPIC BLVD

Control Type: Signalized Delay (sec / veh): 41.6
 Analysis Method: HCM 2010 Level Of Service: D
 Analysis Period: 15 minutes Volume to Capacity (v/c): 0.580

Intersection Setup

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Approach	Northbound				Southbound				Eastbound				Westbound				
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]				
Turning Movement	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	
Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Speed [mph]	30.00				30.00				35.00				30.00				
Grade [%]	0.00				0.00				0.00				0.00				
Crosswalk	Yes				Yes				No				Yes				

Volumes

Name	Ocean Ave				Ocean Ave				Olympic Blvd				Olympic Blvd				
Base Volume Input [veh/h]	20	0	940	130	290	1050	0	32	1085	209	90	0	220	0	0	0	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	18	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	958	130	291	1051	0	32	1085	209	90	0	220	0	0	0	0
Peak Hour Factor	1.000	1.000	0.931	0.931	0.9069	0.9069	1.0000	1.0000	1.0000	1.0000	1.0000	0.8012	1.0000	0.8012	1.0000	1.0000	1.0000
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	257	35	80	290	0	8	271	52	28	0	69	0	0	0	0
Total Analysis Volume [veh/h]	20	0	1028	139	321	1159	0	32	1085	209	112	0	275	0	0	0	0
Presence of On-Street Parking	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	207				130				0				0				
Bicycle Volume [bicycles/h]	22				6				42				51				

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Prote	Permi	Permi	Permi	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	3	0	8	0	7	4	0	0	0	0	6	0	0	0
Auxiliary Signal Groups														
Lead / Lag	Lead	-	-	-	Lead	-	-	-	-	-	Lead	-	-	-
Minimum Green [s]	5	0	7	0	5	7	0	0	0	0	7	0	0	0
Maximum Green [s]	15	0	30	0	15	30	0	0	0	0	30	0	0	0
Amber [s]	3.6	0.0	3.6	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Split [s]	12	0	97	0	25	110	0	0	0	0	28	0	0	0
Vehicle Extension [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	0	7	0	0	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	12	0	0	21	0	0	0	0	21	0	0	0
Rest in Walk		No				No					No			
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.6	0.0	2.6	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0
Minimum Recall	No		Yes		No	Yes					No			
Maximum Recall	No		No		No	No					No			
Pedestrian Recall	No		No		No	No					No			
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	4.60	4.60	4.60	4.60	4.60	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	2.60	0.00	2.60	2.60	2.60
g_i, Effective Green Time [s]	3	103	103	117	110	23	23
g / C, Green / Cycle	0.02	0.69	0.69	0.78	0.73	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.28	0.09	0.47	0.32	0.09	0.24
s, saturation flow rate [veh/h]	1810	3618	1584	685	3618	1231	1132
c, Capacity [veh/h]	34	2494	1092	537	2651	192	177
d1, Uniform Delay [s]	72.93	10.10	7.92	7.19	7.87	58.69	63.23
k, delay calibration	0.04	0.50	0.50	0.50	0.50	0.04	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.73	0.51	0.24	4.86	0.53	1.04	275.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

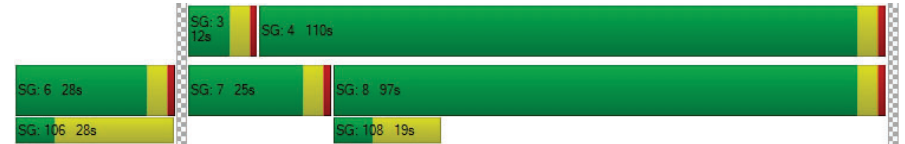
X, volume / capacity	0.58	0.41	0.13	0.60	0.44	0.58	1.56
d, Delay for Lane Group [s/veh]	78.66	10.60	8.16	12.05	8.40	59.74	338.86
Lane Group LOS	E	B	A	B	A	E	F
Critical Lane Group	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.82	7.38	1.60	3.13	7.22	4.03	20.30
50th-Percentile Queue Length [ft/ln]	20.57	184.58	40.06	78.33	180.45	100.77	507.53
95th-Percentile Queue Length [veh/ln]	1.48	11.84	2.88	5.64	11.62	7.26	32.67
95th-Percentile Queue Length [ft/ln]	37.02	295.98	72.11	140.99	290.60	181.38	816.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	78.66	0.00	10.60	8.16	12.05	8.40	0.00	0.00	0.00	0.00	59.74	0.00	338.86
Movement LOS	E		B	A	B	A					E		F
d_A, Approach Delay [s/veh]	11.46			9.19			0.00			258.08			
Approach LOS	B			A			A			F			
d_I, Intersection Delay [s/veh]	41.61												
Intersection LOS	D												
Intersection V/C	0.580												

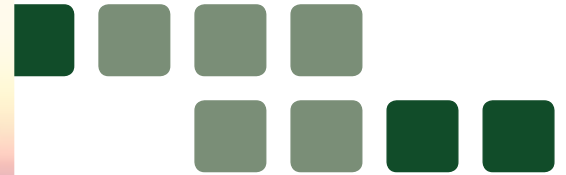
Sequence

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



**APPENDIX C:
SANTA MONICA TRAVEL DEMAND FORECASTING MODEL
DOCUMENTATION**

SANTA MONICA LUCE MODEL DEVELOPMENT REPORT



Submitted by:

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December 2009



FEHR & PEERS
TRANSPORTATION CONSULTANTS

**SANTA MONICA LUCE
MODEL DEVELOPMENT REPORT**

December 2009

Prepared for:

CITY OF SANTA MONICA

Prepared by:

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INTRODUCTION

The purpose of this report is to introduce the Travel Demand Forecasting (TDF) model built for Santa Monica's Land Use and Circulation Element (LUCE) update. This report describes the model development process in general, and how this process was applied to develop the City of Santa Monica model, including the sources of data used to develop key model inputs.

GENERAL DISCUSSION OF THE TDF MODEL

This section summarizes the answers to commonly asked questions related to TDF models and how the City can use a TDF model.

What is a TDF model?

A TDF model is a computer program that simulates traffic levels and travel patterns for a specific geographic area. The program consists of input files that summarize the area's land uses, street network, travel characteristics, and other key factors. Using this data, the model performs a series of calculations to determine the amount of trips generated, the beginning and ending location of each trip, and the route taken by the trip. The model's output includes projections of traffic volumes on major roads, and peak hour turning movements at certain key intersections.

How is a TDF model useful?

The City TDF model will be a valuable tool for preparing long-range transportation planning studies, such as Santa Monica's General Plan Update. The travel model will be used to estimate the average daily and peak hour traffic volumes on the major roads in response to future land use, transportation infrastructure, and policy assumptions, and form a consistent basis by which to analyze the different potential land use scenarios. Additionally, using these traffic projections, transportation improvements will be identified to accommodate the changing traffic patterns associated with the General Plan's preferred land use alternative.

How do we know if the TDF model is accurate?

To be deemed accurate for projecting traffic volumes in the future, a model must first be calibrated to a year in which actual land use data and traffic volumes are available and well documented. A model is accurately calibrated when it replicates the actual traffic counts on the major roads within certain ranges of error established in *Travel Forecasting Guidelines* (Caltrans, 1992) and it demonstrates stable responses to varying levels of inputs. The Santa Monica model has been calibrated to 2008 base year conditions using actual traffic counts, census data, and land use data surveyed and compiled by City staff.

Is the City of Santa Monica TDF model consistent with standard practices?

The City of Santa Monica model is consistent in form and function with standard travel forecasting models used in transportation planning. The model includes a land use/trip generation module, a gravity-based trip distribution model, and a capacity-restrained equilibrium traffic assignment process. The travel model utilizes Version 5.0 of the TransCAD Transportation GIS software, which is consistent with many of the models used by local jurisdictions in California and throughout the nation. The Southern California Association of Governments (SCAG), the metropolitan planning organization (MPO) for Southern California, maintains their current regional travel demand model in TransCAD.

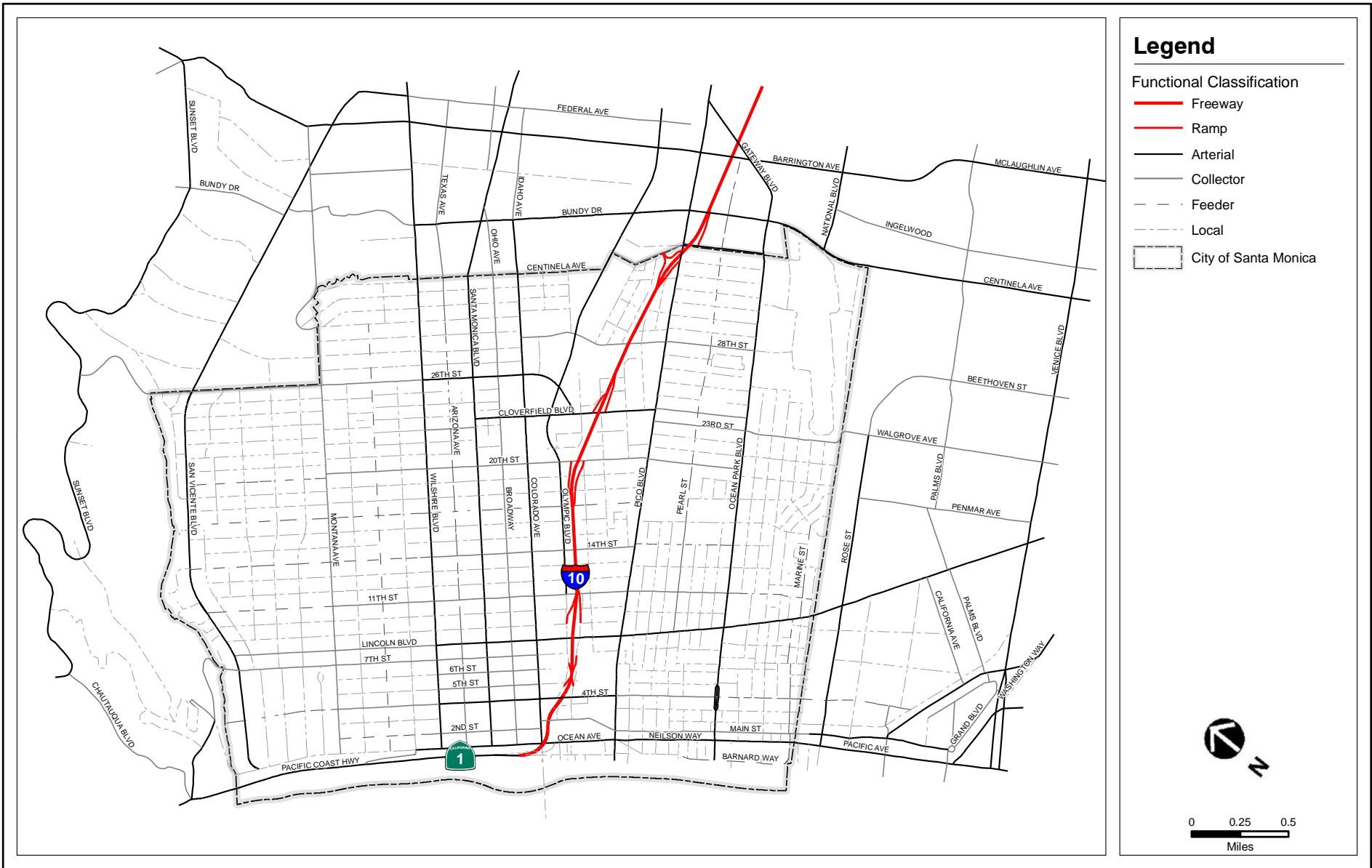
How can the TDF model be used?

The TDF model can be used for many purposes related to the planning and design of the City's transportation system. The following is a partial listing of the potential uses of the TDF model:

- To update the land use and circulation elements of the General Plan
- To conduct a city-wide traffic impact fee program
- To evaluate the traffic impacts of area-wide land use plan alternatives
- To evaluate the shift in traffic resulting from a roadway improvement
- To evaluate the traffic impacts of land development proposals
- To determine trip distribution patterns of larger land development proposals
- To support the development of transportation sections of Environmental Impact Reports (EIRs)
- To support the preparation of project development reports for Caltrans

STUDY AREA AND STREET NETWORK

Figure 1 shows the study area for the City travel demand forecasting model. The model area encompasses the City of Santa Monica and neighboring areas in the City of Los Angeles that have high levels of interaction with Santa Monica. The study area contains all areas that may experience land use changes under *Santa Monica LUCE* and the LUCE alternatives.



SUMMARY OF THE INPUT DATA

DATA COLLECTION

A data collection effort was undertaken at the outset of the *Santa Monica LUCE* process. Data sources include SCAG for street network and regional travel data, Caltrans and the City of Santa Monica for traffic count data, and the City of Santa Monica for land use, and street network data.

LAND USE DATA

Land use data is one of the primary inputs to the Santa Monica model, and this data is instrumental in estimating trip generation. The model's primary source of land use data is the City's parcel-level land use database (maintained in a GIS format). This database provides information on how much development currently exists within each traffic analysis zone (TAZ) (discussed below). The City's land use data is supplemented by SCAG TAZ-based data for areas in the City of Los Angeles bordering the City of Santa Monica.

Land use in the model is divided into a variety of residential and non-residential categories. The City of Santa Monica model employs 30 land use data categories to describe land use in the City, as shown in Table 1.

TRAFFIC ANALYSIS ZONE SYSTEM

Travel demand models use traffic analysis zones (TAZs) to subdivide the study area for the purpose of connecting land uses to the street network. TAZs represent physical areas containing land uses that produce or attract vehicle-trip ends. Since SCAG is the MPO for the area, the TAZ system for the Santa Monica model was developed to nest within SCAG's TAZ system. After reviewing the TAZ layer used in the SCAG regional model, along with the street network and recent aerial photographs, a set of TAZ boundaries was created for the Santa Monica model to achieve the following local area enhancements:

- Large TAZs were subdivided, allowing for a more detailed assignment of local traffic to the highway network. This level of detail was necessary to forecast traffic volumes at the turning movement level.
- Considerable detail was added to the TAZ system in the downtown street grid to allow for a detailed traffic assignment and a more accurate calculation of the 4D variables (density, diversity of land uses, design of the streetscape, and access to regional destinations).
- TAZs were created to be consistent with large developments such as the Water Garden and Santa Monica Place.

The resulting 2008 model TAZ system includes 824 zones in the model area, of which 599 zones cover the City of Santa Monica and the remaining 225 cover the surrounding areas of the City of Los Angeles. Detailed maps showing the TAZ numbers in all portions of the model area are included in Appendix A.

Also included in the TAZ structure are the external stations or gateways at points where major roadways provide access into the model area. The external gateways represent all major routes by which traffic can enter or exit the study area and capture the traffic entering, exiting, or passing through the model area. Table 2 contains a list of the 22 external gateways numbered from 1001 to 1022 that were established for this model. Figure 2 illustrates the locations of the external stations.

**TABLE 1
MODEL LAND USE CATEGORIES**

Residential	
Land Use Type	Units
Single-Family (SF)	Dwelling Units
Multi-Family Zero Cars (MF_0)	Dwelling Units
Multi-Family One Car (MF_1)	Dwelling Units
Multi-Family Two Cars or More Cars (MF_2P)	Dwelling Units
Convalescent Care	Dwelling Units
Non-Residential	
Land Use Type	Units
Personal Services	Thousand Square-feet
Airport	Based Aircraft
Entertainment	Thousand Square-feet
Office	Thousand Square-feet
Creative Office	Thousand Square-feet
Government Office	Thousand Square-feet
Medical Office	Thousand Square-feet
Hospital	Thousand Square-feet
Automotive Related	Thousand Square-feet
Lodging	Thousand Square-feet
Cultural	Thousand Square-feet
Nightlife	Thousand Square-feet
Restaurant	Thousand Square-feet
Retail	Thousand Square-feet
Light Industrial	Thousand Square-feet
Heavy Industrial	Thousand Square-feet
Police and Fire Services	Thousand Square-feet
Elementary and Middle School	Students
High Schools	Students
College	Students
Religious Facilities	Thousand Square-feet
Recreation (Parks and Beaches)	Acres
SCAG Retail ¹	Employees
SCAG Office ¹	Employees
SCAG Industrial ¹	Employees

¹ Data adapted from SCAG TAZs uses SCAG units of employment

Source: Fehr & Peers, 2009.

**TABLE 2
EXTERNAL GATEWAYS**

Gateway Number	Gateway Description
1001	PCH north of Chatauqua
1002	Sunset Bl south of Hartzell (north of Chatauqua)
1003	Kenter Ave north of Sunset
1004	Barrington Ave north of Sunset
1005	Sunset Bl east of s Barrington Place
1006	Wilshire east of Federal
1007	Ohio east of Federal
1008	Santa Monica Bl east of Federal
1009	Olympic east of Federal
1010	Pico west of Purdue
1011	National east of Barrington
1012	Palms east of McLaughlin
1013	Venice east of McLaughlin
1014	McLaughlin south of Venice
1015	Inglewood south of Venice
1016	Centinela south of Venice
1017	Walgrove south of Venice
1018	Lincoln south of Venice
1019	Abbot Kinney btw Washington Way & Victoria Ave
1020	Ocean Ave south of Venice
1021	Pacific Ave south of Venice
1022	I-10 at Barrington

Source: Fehr & Peers, 2009.



STREET NETWORK

The street network for the base year conditions is derived from the City's GIS roadway centerline file. The model street network includes all freeways, state highways, arterials, collectors, and local roads within the study area (see Figure 1). These classifications are based on the City's 1984 General Plan circulation element and reflect existing conditions.

The streets shown in Figure 1 are classified in four major categories and form the primary street network that is represented in the model structure. As is typical for urban-area models, the model network focuses on the most used facility types. Residential streets are included as well, not to precisely replicate individual travel patterns but to distribute traffic volumes more realistically. The four major street categories are described below.

Freeways

Freeways are high-capacity facilities that primarily serve longer distance travel. Access is limited to interchanges typically spaced at least one mile apart. Interstate 10 is the freeway that runs directly through the Santa Monica model area.

Highways

Roadways designated as highways are typically State highways that are not limited-access freeways. In Santa Monica, these facilities serve travel between the City and its neighboring jurisdictions. The primary highway in Santa Monica is SR 1 (PCH). Portions of Lincoln Boulevard and Santa Monica Boulevard are also designated as State Routes in Santa Monica. However, these facilities function more like arterials and are coded as such in the model.

Arterials

Roadway segments classified as arterials are major roads that provide connections within the City, between the City and neighboring areas, and through the City (cut-through traffic). Arterials in Santa Monica typically have two lanes in each direction, with travel speeds of 30-35 miles per hour (mph).

Collectors

Collectors are facilities that connect local streets to the arterial and highway system, and may also provide direct access to local land uses. Collectors typically have one lane in each direction, with speeds of 25-30 mph. In Santa Monica, streets that fulfill this purpose but are primarily located in residential areas are called feeders.

For each of its records, the street network database includes a street name, distance, functional class, speed, capacity, and number of lanes. These attributes were checked using maps, aerial photographs, and other data provided by the City. Table 3 shows the initial roadway speeds, lanes and capacities used for each roadway class in the model. Where necessary, these values were then modified to reflect current conditions at specific locations.

For a representative sample of network links, traffic counts for daily, AM peak hour, and PM peak hour have been coded for validating the model. These traffic counts were collected as part of the City's ongoing count program.

**TABLE 3
TYPICAL ROADWAY SPEEDS AND CAPACITIES**

Roadway Classification ¹	Speed (MPH)	Total Through Lanes	Lane Capacity (Vehicles per hour per lane)	Total Facility Capacity (Vehicles per hour)
Freeway	65	4-10	2,000	8,000-20,000
Highway	50	4-6	1,200	4,800-7,200
Arterial	30-35	4	900	3,600
Collector/Feeder	25-30	2	600	1,200
Local	25	2	600	1,200
Ramp	30	1	1,800	1,500
Centroid Connector ²	30	2	10,000	20,000

¹ City of Santa Monica Land Use and Circulation Element, 1984.

² Centroid connectors are abstract representations of the starting and ending point of each trip, and thus should have no Source: Fehr & Peers, 2009.

DESCRIPTION OF THE MODEL CALIBRATION PROCESS

Model calibration is the process by which parameters for the model are determined. These parameters are based on comparing travel estimates computed by the model with actual data from the area being modeled. This section provides a general description of the calibration steps and the adjustments made during the process to achieve accuracy levels that are within Caltrans guidelines.

TRIP GENERATION RATES

Trip generation rates relate the number of vehicle trips going to and from a site to some measure of the intensity of use at the site. Each trip has two ends, a “production” and an “attraction”. By convention, trips with one end at a residence are defined as being “produced” by the residence and “attracted” to the other use (workplace, school, retail store, etc.), and are called “Home-Based” trips. Trips that do not have one end at a residence are called “Non-Home-Based” trips.

There are eight trip purposes used in the Santa Monica model:

1. Home-Based Work (HBW): trips between a residence and a workplace.
2. Home-Based Other (HBO): trips between a residence and any other destination.
3. Non-Home-Based (NHB): trips that do not begin or end at a residence, such as traveling from a workplace to a restaurant, or from a retail store to a bank.
4. School (SCHOOL): trips to and from a school.
5. College (COLLEGE): trips to and from a college.
6. Recreational (REC): trips to and from the beaches and parks.
7. Internal to External Commute Trips (IXHBW): Work trips of model area residents who work outside the model area
8. External to Internal Commute Trips (XIHBW): Work trips of model area employees who live outside the model area.

Trip generation rates are initially defined for total trips and later split by trip purpose, for both productions and attractions.

The most widely used source for individual project vehicle trip generation rates in the transportation planning field is *Trip Generation, 8th Edition* (Institute of transportation Engineers [ITE], 2008). This book contains national averages of trip generation rates for a variety of land uses in what are generally suburban locations. The ITE land use categories tend to be very specific, while model land use categories (accounting for all land use in the City) tend to be more general. ITE rates are appropriate for smaller site specific uses, such as traffic studies for development review, and they can provide a starting point for travel models by capturing the interaction between all land uses in the City. However, the unique local characteristics of Santa Monica require the development of specific trip generation rates for the model.

A traffic impact study uses ITE trip generation rates because, in most cases, the project being examined shares characteristics with the information contained in *Trip Generation, 8th Edition*. In other words, both the traffic impact study and the ITE rates rely on single-use, isolated projects that have plenty of free

parking and little or no interaction with other nearby uses. When assessing the impact of an individual project, the ITE rates are typically appropriate since they can correctly mimic the site being analyzed in the traffic impact study.

The Santa Monica model, on the other hand, generates trips by purpose, and balances productions to attractions. The model also has trip rates calibrated to local conditions and other advanced trip generation features such as the cross classification of dwelling units by vehicle availability. Traffic impact studies rely on ITE trip rates that only vary based on land use type or size. While these trip rates are a valid starting point for model calibration and validation, they have a different purpose and are not necessarily suitable for demand forecasting without customization.

Certain ITE rates are more applicable to Santa Monica model rates because of their comparable level of detail. For example, both ITE and the Santa Monica model have a generic office category. Some ITE rates, however, cannot be used directly because the land use category is not the same as the City's land use classifications. For example, ITE's restaurant categories include high turnover restaurant, fast food restaurant, fast food restaurant with drive-through with seating, fast food restaurant with drive-through and no seating, etc. By necessity, Santa Monica restaurant rates represent a compilation and average of those rates customized to the City. It is important to recognize that ITE rates are also averages, based on driveway counts at multiple locations, so the utilization of average rates within the Santa Monica model is entirely appropriate.

The 2008 trip generation rates were initially based on residential trip generation surveys, the SCAG regional model, the San Diego Association of Governments' (SANDAG) trip generation survey, recently calibrated models in similar areas, and *Trip Generation, 8th Edition*. For example, calibrated trip generation rates from Santa Barbara and West Hollywood were used as a starting point. These areas were selected because they share socioeconomic and land use characteristics with the City of Santa Monica. The rates were then modified to account for local conditions based on counts, production-to-attraction balancing (discussed below), and the difference between ITE and model land use definitions. The final Santa Monica trip generation rates are unique to the Santa Monica model, and they are ultimately based upon the results of successful model calibration and validation.

PRODUCTION/ATTRACTION BALANCING

Local trips (internal-to-internal, or I-I) are trips that both start and end in the study area. One of the basic assumptions of any travel model is that the total number of local trips produced is equal to the total number of local trips attracted. It is logically assumed that if a journey is started somewhere, it must have an ending somewhere else. If the total productions and attractions are not equal, the model will typically adjust the attractions to match the productions, thus ensuring that each departing traveler finds a destination. While it is never possible to achieve a perfect match between productions and attractions prior to the automatic balancing procedure, the existence of a substantial mismatch in one or more trip purposes indicates that either land use inputs or trip generation factors may be in error.

Table 4 summarizes the local trip productions and attractions from the Santa Monica travel model for each trip purpose, prior to the application of the automatic balancing procedure. Guidelines published by Federal Highway Administration's Transportation Model Improvement Program (TMIP) and National Highway Cooperative Research Program (NCHRP) suggest that, prior to balancing, the number of productions and attractions should match to within plus or minus 10% (i.e., the production-to-attraction ratio should be within the range of 0.90 to 1.10). The results shown in Table 4 indicate that the 2008 model meets the published guidelines for all trip purposes.

**TABLE 4
TRIP PRODUCTION TO ATTRACTION RATIOS BY PURPOSE**

Trip Purpose	Production/ Attraction Ratio	Percent of Total Daily Vehicle Trips	
		2008 Santa Monica Model ¹	California ²
Home-Based Work (HBW)	1.00	22%	21%
Home-Based Other (HBO)	1.00	47%	48%
Non-Home-Based (NHB)	1.00	32%	31%
Total		101%	100%

¹ The trip purposes listed are the broad categories applied in most every travel model. The more specific Santa Monica trip purposes are subsets of these broader trip purposes, and have been aggregated here for ease of comparison. IXHBW and XIHBW are subsets of the HBW trip purpose. School, College, and REC are subsets of the HBO trip purpose.

² 2000-2001 California Statewide Household Travel Survey Final Report, June 2002.

Note: May not total 100% due to rounding

Source: Fehr & Peers, 2009.

In addition to production and attraction balancing, the percent of total trips for each purpose were checked for reasonableness. Typical values are provided below:

- HBW¹ trips 18% to 27% of all trips
- HBO trips: 47% to 54% of all trips
- NHB trips: 22% to 31% of all trips

This information, in conjunction with trip generation rate comparisons and trip purpose distributions discussed later in this report, indicates that the trip generation component of the Santa Monica model is performing reasonably.

FURTHER REFINEMENT

In addition to the standard trip generation procedures, certain enhancements were added to the Santa Monica model to better capture local trip making characteristics and provide the ability to test certain policy options for future development scenarios. These enhancements include dividing the model area into four “area types” and cross-classifying multifamily households by auto ownership.

Area Types

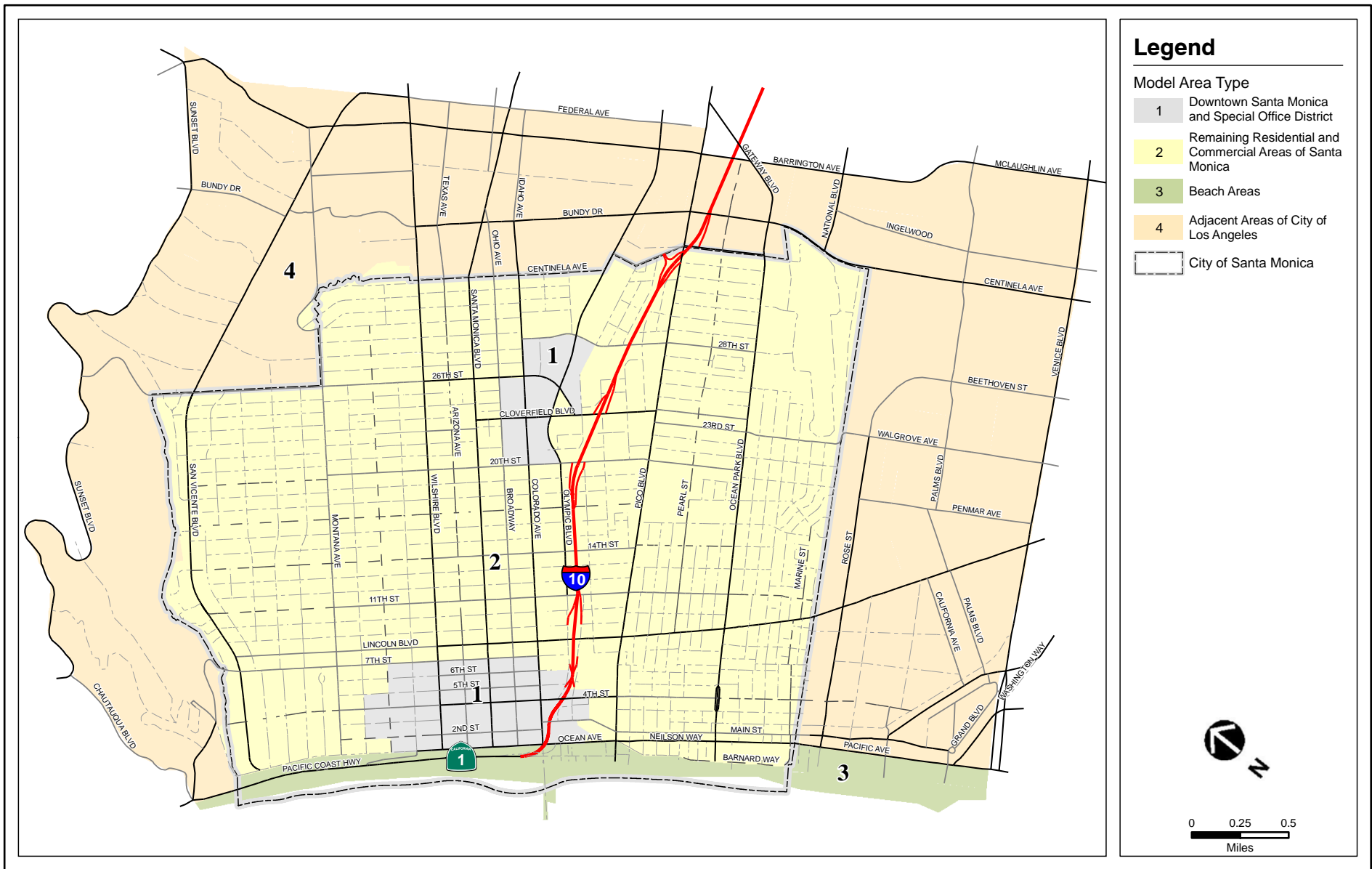
The model area contains a variety of development patterns, each with different land use characteristics and associated trip making patterns. To account for these differences, the model area was divided into four “area types.” The four area types, shown in Figure 3, have their own associated trip generation rates and internal/external trip making characteristics.² Trip generation rates for each land use in each area type are shown in Table 5.

Area type 1 represents Downtown Santa Monica and the Special Office District. This area contains the greatest concentration of commercial and retail land uses within the boundaries of the model. These land uses are grouped together because of their similar density and propensity to attract trips from outside the model area. These two locations differ from the rest of the model area by exhibiting high levels of walkability and a lower propensity for driving. The boundary between area type 1 locations and the rest of the model was based on the likelihood of pedestrian travel between complementary land uses.

Modal choice is strongly determined by auto availability, and since most people arrive in Downtown Santa Monica and the Special Office District by car, the locations covered by area type 1 were defined by two factors that counteracted what otherwise would have been a predisposition towards driving. Distance from parking garages was the first factor. People are more likely to walk than drive when the distance they need to travel is a quarter mile or less. The second factor was a high density of complementary land uses. Driving trips are eliminated when people can park once and walk to multiple destinations.

¹ The trip purposes listed are the broad categories applied in most every travel model. The more specific Santa Monica trip purposes are subsets of these broader trip purposes, and have been aggregated here for ease of comparison. IXHBW and XIHBW are subsets of the HBW trip purpose. School, College, and REC are subsets of the HBO trip purpose.

² Internal/External trip making is explained in the Trip Distribution section below



**TABLE 5
DAILY VEHICLE TRIP GENERATION RATE COMPARISON**

Residential ¹					
Land Use Type	Units	Santa Monica Model Area Type 1	Santa Monica Model Area Type 2	Santa Monica Model Area Type 3	Santa Monica Model Area Type 4
Single-Family (SF)	Dwelling Units	10.00	10.00	10.00	10.00
Multi-Family Zero Cars (MF_0)	Dwelling Units	1.61	2.21	2.21	N/A
Multi-Family One Car (MF_1)	Dwelling Units	3.22	3.85	3.85	3.85
Multi-Family Two Cars or More Cars (MF_2P)	Dwelling Units	5.50	6.49	6.49	N/A
Convalescent Care	Dwelling Units	N/A	2.02	2.02	N/A
Non-Residential ²					
Land Use Type	Units	Santa Monica Model Area Type 1	Santa Monica Model Area Type 2	Santa Monica Model Area Type 3	Santa Monica Model Area Type 4
Personal Services	Thousand Square-feet	20.00	44.32	44.32	N/A
Airport	Based Aircraft	N/A	5.00	N/A	N/A
Entertainment	Thousand Square-feet	36.00	40.00	40.00	N/A
Office	Thousand Square-feet	10.00	10.52	N/A	N/A
Creative Office	Thousand Square-feet	9.00	9.00	N/A	N/A
Government Office	Thousand Square-feet	36.00	80.00	N/A	N/A
Medical Office	Thousand Square-feet	30.00	30.00	N/A	N/A
Hospital	Thousand Square-feet	N/A	16.50	N/A	N/A
Automotive Related	Thousand Square-feet	152.84	152.84	N/A	N/A
Lodging	Thousand Square-feet	1.93	1.93	1.93	N/A
Cultural	Thousand Square-feet	29.75	29.75	29.75	N/A
Nightlife	Thousand Square-feet	21.77	21.77	21.77	N/A
Restaurant	Thousand Square-feet	80.00	82.00	80.00	N/A
Retail	Thousand Square-feet	29.75	41.00	38.76	N/A
Light Industrial	Thousand Square-feet	1.50	1.50	N/A	N/A
Heavy Industrial	Thousand Square-feet	N/A	1.50	N/A	N/A
Police and Fire Services	Thousand Square-feet	6.31	6.31	N/A	N/A
Elementary and Middle School	Students	1.29	1.25	N/A	N/A
High Schools	Students	N/A	1.71	N/A	N/A
College	Students	N/A	1.20	N/A	N/A
Religious Facilities	Thousand Square-feet	9.11	9.11	N/A	N/A
Recreation (Parks and Beaches)	Acres	27.50	55.00	52.50	N/A
SCAG_Retail ¹	Employees	N/A	N/A	16.47	16.47
SCAG_Office ¹	Employees	N/A	N/A	2.89	2.89
SCAG_Industrial ¹	Employees	N/A	N/A	1.19	1.19

¹ The ITE manual does not stratify multifamily dwelling units by auto ownership. ITE multifamily rates range from 4.18 to 6.72 depending on the dwelling type. Rates based on auto ownership were developed from National Household Travel Survey (NHTS) data for the City of Santa Monica. NHTS rates range from a minimum of 1.16 to a maximum of 12.52.

² Not all non-residential land use categories are present in each area type. 2008 trip generation rates were only developed for land uses present in 2008 in each area type.

Source: Fehr & Peers, 2009.

Complementary land uses also allow people who do not arrive by car (by way of public transit, biking, walking) to carry out multiple trips within their walking radius.

Area type 2 represents the remaining residential and commercial portion of Santa Monica. This area has development patterns generally consisting of connecting streets, and a mixture of residential and non-residential land uses.

Area type 3 represents the beach areas in the model area. These areas contain a large portion of the recreational land use. Most of the commercial land uses in the area support the recreational land uses. There is limited residential development in area type 3.

Area type 4 represents the areas of the City of Los Angeles surrounding the City of Santa Monica.

Multi-Family Unit Vehicle Ownership

In order to provide the ability to test certain potential policy alternatives, multi-family dwelling units were divided into three types representing varying levels of automobile ownership. Auto-ownership data for each census tract in Santa Monica was obtained from the 2002 National Household Travel Survey, which is conducted by the United States Census Bureau. The total number of multifamily units in each census tract was apportioned to the relevant multi-family trip generation category based on the percentage of households at each level of auto ownership.

TRIP DISTRIBUTION (GRAVITY MODEL)

Once the trip generation step has determined the number of trips that begin and end in each zone, the trip distribution process determines the specific destination of each originating trip. The destination may be within the zone itself, resulting in an intra-zonal trip. If the destination is outside of the zone of origin, it is an inter-zonal trip. Internal-internal (I-I) trips originate and terminate within the model area. Trips that originate within but terminate outside of the model area are internal-external (I-X), and trips that originate outside and terminate inside of the model area are external-internal (X-I). Trips passing completely through the model area are external-external (E-E).

The trip distribution model uses a gravity model equation to distribute trips to all zones. This equation estimates an accessibility index for each zone based on the number of attractions in each zone and a friction factor, which is a function of travel time between zones. Each attraction zone is given its share of productions based on its share of the accessibility index. This process applies to the I-I, I-X, and X-I trips. The E-E trips are added to the trip table prior to final assignment.

Friction Factors

Friction factors, also known as travel time factors, determine the relative attractiveness of each destination zone based on the travel time between TAZs and the number of potential origins and destinations in each TAZ. These factors are used in the trip distribution stage of the model. The 2008 Santa Monica model friction factors are based on data reported in national modeling reference documents such as National Cooperative Highway Research Program (NCHRP) 365, and modified based on local conditions and comparison with the SCAG model. See Appendix B for friction factor curves.

Trips between the Model Area and External Areas

One of the important inputs to a travel model is an estimate of the amount of travel between the study area and neighboring areas outside the model. These are typically called internal-external, or I-X/X-I, trips.

The United States Census Bureau surveys residential and work locations at the place level. Table 6 illustrates the distribution of work locations for Santa Monica residents, while Table 7 illustrates the distribution of residential locations for Santa Monica employees. The census data is specific to Santa Monica, while the model area also encompasses parts of neighboring Los Angeles. It is assumed that a certain percentage of Santa Monica employees who live outside the City of Santa Monica live in the neighboring area of Los Angeles included in the model area.

Based on this data, the proportion of HBW trips entering and leaving the study area was estimated. For non-work trip purposes, information from the SCAG Regional Model was used to develop an initial estimate of the percent of HBO and NHB trips that travel between Santa Monica and other areas. These estimates were then refined using the City's land use database. Table 8 summarizes the proportion of trips by purpose and area type that are assumed to have one end outside the model area.

After the number of I-X/X-I trips was estimated, these trips were distributed to the stations around the perimeter of the model area using external station weights. External station weights were based on counts collected at each external station. The number of through trips at each station was subtracted from the count and the remainder was made up of I-X/X-I trips. The resulting external station weights are presented in Figure 4.

Through Trips

Through trips (also called external-external, or EE trips) are those that pass through the study area without stopping inside the study area. The major flows of through traffic in the Santa Monica area use I-10, PCH and Lincoln Boulevard, with lower volumes of through traffic using other streets. The size of these flows was estimated based on Caltrans traffic counts and the SCAG Regional Model. The through trips were modified in conjunction with the external station weights so that results at the model gateways accurately represented observed data. The resulting through trip matrix is summarized in Table 9.

TRIP ASSIGNMENT

The trip assignment process determines the route that each vehicle trip takes from origin to destination. The model selects these routes in a manner that is sensitive to congestion and the desire of drivers to minimize overall travel time. It uses an iterative, capacity-restrained assignment, and volume adjustments are made that progress towards equilibrium. This technique finds a travel path for each trip that minimizes travel time, while taking into account congestion delays caused by other trips in the model.

The general assignment process includes the following steps.

- Assign all trips to the links along their selected paths.
- After all assignments, examine the volume on each link and adjust its impedance based on the volume-to-capacity ratio.
- Repeat the assignment process for a set number of iterations or until specified criteria related to minimizing travel delays are satisfied.

**TABLE 6
WORK LOCATIONS FOR SANTA MONICA RESIDENTS**

Year	Percent Working Inside Santa Monica	Percent Working Outside Santa Monica
2000	33%	67%

Source: U.S. Census Bureau.

**TABLE 7
RESIDENTIAL LOCATIONS FOR SANTA MONICA EMPLOYEES**

Year	Percent Living Inside Santa Monica	Percent Living Outside Santa Monica
2000	17%	83%

Source: U.S. Census Bureau.

**TABLE 8
PERCENT OF TRIPS BY PURPOSE THAT ARE INTERNAL/EXTERNAL FOR EACH AREA TYPE**

Purpose	Area Type 1		Area Type 2		Area Type 3		Area Type 4	
	Production	Attraction	Production	Attraction	Production	Attraction	Production	Attraction
Home-Based Work (HBW) ¹	50%	80%	58%	80%	58%	80%	39%	80%
Home-Based Other (HBO)	20%	65%	10%	60%	20%	65%	39%	75%
Non-Home-Based (NHB)	20%	25%	10%	22%	20%	25%	39%	26%
School	3%	4%	3%	5%	3%	4%	15%	15%
College	9%	N/A	9%	72%	N/A	N/A	9%	72%
Recreational (REC)	5%	75%	5%	75%	5%	83%	6%	0%

¹ Percentages for HBW reported in this table also account for the IXHBW and XIHBW trip purposes.

Source: Fehr & Peers, 2009.

**TABLE 9
MATRIX OF DAILY THROUGH (EE) TRIPS**

Destination	PCH north of Chatauqua	Sunset south of Hartzell (north of Chatauqua)	Kenter Ave north of Sunset	Barrington Ave north of Sunset	Sunset east of Barrington Place	Wilshire east of Federal	Ohio east of Federal	Santa Monica east of Federal	Olympic east of Federal	Pico west of Purdue	National east of Barrington	Palms east of McLaughlin	Venice east of McLaughlin	McLaughlin south of Venice	Inglewood south of Venice	Centinela south of Venice	Walgrove south of Venice	Lincoln south of Venice	Abbot Kinney btw Washington Way & Victoria Ave	Ocean Ave south of Venice	Pacific Ave south of Venice	I-10 at Barrington	Total
PCH north of Chatauqua		0	0	0	0	60	0	5	325	620	145	5	10	15	150	230	100	1,130	730	1,920	1,355	28,365	35,165
Sunset south of Hartzell (north of Chatauqua)	0		0	150	2,925	1,645	145	125	70	15	5	10	10	0	10	30	5	30	15	65	15	845	6,115
Kenter Ave north of Sunset	0	0		80	2,445	650	45	55	5	0	10	10	20	10	35	235	5	0	0	0	0	50	3,655
Barrington Ave north of Sunset	0	150	80		0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	0	240
Sunset east of Barrington Place	0	2,925	2,445	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,370
Wilshire east of Federal	60	1,645	650	0	0		0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	2,370
Ohio east of Federal	0	145	45	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190
Santa Monica east of Federal	5	125	55	0	0	0	0		5	0	0	0	0	0	0	5	0	0	0	0	0	10	205
Olympic east of Federal	325	70	5	0	0	0	0	5		0	0	0	0	0	450	0	0	0	0	0	0	645	1,500
Pico west of Purdue	620	15	0	0	0	0	0	0	0		0	0	0	10	45	350	25	30	0	20	30	285	1,430
National east of Barrington	145	5	10	0	0	0	0	0	0	0		0	0	45	0	10	0	0	0	0	0	5	220
Palms east of McLaughlin	5	10	10	0	0	0	0	0	0	0	0		0	40	25	115	30	0	0	5	5	0	245
Venice east of McLaughlin	10	10	20	0	0	0	0	0	0	0	0	0		310	905	2,140	370	170	0	240	665	0	4,840
McLaughlin south of Venice	15	0	10	0	0	0	0	0	0	10	45	40	310		0	0	0	0	0	0	0	0	430
Inglewood south of Venice	150	10	35	0	0	0	0	0	450	45	0	25	905	0		0	0	0	0	0	0	0	1,620
Centinela south of Venice	230	30	235	5	0	15	0	5	0	350	10	115	2,140	0	0		0	0	0	0	0	10	3,145
Walgrove south of Venice	100	5	5	0	0	0	0	0	0	25	0	30	370	0	0	0		0	0	0	0	0	535
Lincoln south of Venice	1,130	30	0	0	0	0	0	0	0	30	0	0	170	0	0	0	0		0	0	0	0	1,360
Abbot Kinney btw Washington Way & Victoria Ave	730	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	745
Ocean Ave south of Venice	1,920	65	0	0	0	0	0	0	0	20	0	5	240	0	0	0	0	0	0		0	0	2,250
Pacific Ave south of Venice	1,355	15	0	5	0	0	0	0	0	30	0	5	665	0	0	0	0	0	0	0		0	2,075
I-10 at Barrington	28,365	845	50	0	0	0	0	10	645	285	5	0	0	0	0	10	0	0	0	0	0		30,215
Total	35,165	6,115	3,655	240	5,370	2,370	190	205	1,500	1,430	220	245	4,840	430	1,620	3,145	535	1,360	745	2,250	2,075	30,215	23,380

Note: All trips are rounded to the nearest 5.
Source: SCAG

Calibration of the street network included modification of the centroid connectors to more accurately represent the location at which traffic accesses local roads; adjustment of speeds from posted speed limits to reflect the attractiveness of the route and the prevailing speed of traffic; and refinement of turn penalties.

Turn Penalties

Turn penalties are used to prohibit or add delay to certain turning movements. The Santa Monica model prohibits traffic from getting off a freeway ramp and then immediately getting back on. The model also prohibits traffic from making turns across impassable medians. In addition, the model does not allow U-turns in order to avoid counter-intuitive traffic routing. Information on prohibited turns was provided by the City and supplemented with field surveys. Turn penalties may be in effect during the entire day, or only during one or both peak periods.

MODEL VALIDATION

Model validation is the term used to describe model performance in terms of how closely the model's output matches existing travel data in the base year. During the model development process, these outputs are used to further calibrate model inputs. The extent to which model outputs match existing travel data validates the assumptions of the inputs.

Traditionally, most model validation guidelines have focused on the performance of the trip assignment function in accurately assigning trips to the street network. This metric is called static validation, and it remains the most common means of measuring model accuracy.

Models are seldom used for static applications; however, by far the most common use of models is to forecast how a change in inputs would result in a change in traffic conditions. Therefore, another test of a model's accuracy focuses on the model's ability to predict realistic differences in outputs as inputs are changed. This method is referred to as dynamic validation. This section describes the highest-level validation checks that have been performed for the Santa Monica model.

STATIC VALIDATION

The most critical static measurement of the accuracy of any travel model is the degree to which it can approximate actual traffic counts in the base year. Caltrans has established certain trip assignment guidelines for models forecasting future year traffic in *Travel Forecasting Guidelines* (California Department of Transportation, November 1992). The validity of the Santa Monica model was tested under daily, AM peak hour, and PM peak hour conditions. Model volumes were compared to existing traffic counts at 198 individual count sites for daily validation, and 560 count sites for AM and PM peak hour validation. The results are shown in Tables 10 and 11.

Link volume results from model runs were examined and checked for reasonableness. Links where model results varied substantially from the observed counts were identified, and the characteristics of these links were reviewed to ensure that the link attributes reflected local operating conditions. In some cases, link characteristics such as speeds were modified to better reflect conditions on the ground.

Comparison Techniques

Travel model accuracy is usually tested using four comparison techniques:

- The volume-to-count ratio is computed by dividing the model volume by the actual traffic count for individual roadways (or intersections) area-wide.
- The maximum deviation is the difference between the model volume and the actual count divided by the actual count.
- The correlation coefficient estimates the relationship between actual traffic counts and the estimated traffic volumes from the model.
- The percent root mean square error (RMSE) is the square root of the model volume minus the actual count squared, divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model.

**TABLE 10
RESULTS OF DAILY MODEL VALIDATION**

Validation Item	Criterion for Acceptance	Model Results
Count Locations	N/A	198
% of Links Within Caltrans Standard Deviations	At Least 75%	75%
% of Screenlines Within Caltrans Standard Deviations	100%	100%
2-way Sum of All Links Counted	Within $\pm 10\%$	6%
Correlation Coefficient	Greater than 88%	98%
RMSE	40% or less	24%

Source: Fehr & Peers, 2009.

**TABLE 11
RESULTS OF PEAK HOUR MODEL VALIDATION**

Validation Item	Criterion for Acceptance	AM Peak Hour Model Results	PM Peak Hour Model Results
Count Locations	N/A	560	560
% of Links Within Caltrans Standard Deviations	At Least 75%	77%	78%
% of Screenlines Within Caltrans Standard Deviations	100%	100%	100%
2-way Sum of All Links Counted	Within $\pm 10\%$	-6%	5%
Correlation Coefficient	Greater than 88%	95%	94%
RMSE	40% or less	25%	29%

Source: Fehr & Peers, 2009.

Validation Guidelines

For a model to be considered accurate and appropriate for use in travel forecasting, it must replicate actual conditions within a certain level of accuracy. Since it would be impossible for any model to replicate all counts precisely, validation guidelines have been established by Caltrans and other agencies. Key validation standards for daily travel models based on the Caltrans guidelines are summarized below:

- At least 75 percent of the roadway links for which counts are available should be within the maximum desirable deviation, which ranges from approximately 15 to 60 percent depending on total volume (the larger the volume, the less deviation is permitted).
- All of the roadway screenlines should be within the maximum desirable deviation, which ranges from approximately 15 to 64 percent depending on total volume.
- The two-way sum of the volumes on all roadway links for which counts are available should be within 10 percent of the counts.
- The correlation coefficient between the actual ground counts and the estimated traffic volumes should be greater than 88 percent.

Although not stated in the Caltrans standards, an additional Fehr & Peers validation guideline was applied to the Santa Monica model:

- The RMSE should not exceed 40 percent.

DYNAMIC VALIDATION

The traditional approach to the validation of travel demand models is to compare the link volumes for the model's base year to actual traffic counts. This approach provides information on a model's ability to reproduce a static condition. While reproducing these conditions is very important, it is also important to know that the model will produce stable and reasonable results when various inputs such as land use are changed. The following section presents a selection of the dynamic validation results.

Land Use Changes

A basic form of dynamic validation is to vary the amounts of a particular land use type and compare the magnitude and direction of change from the original forecast. Of particular interest are changes in:

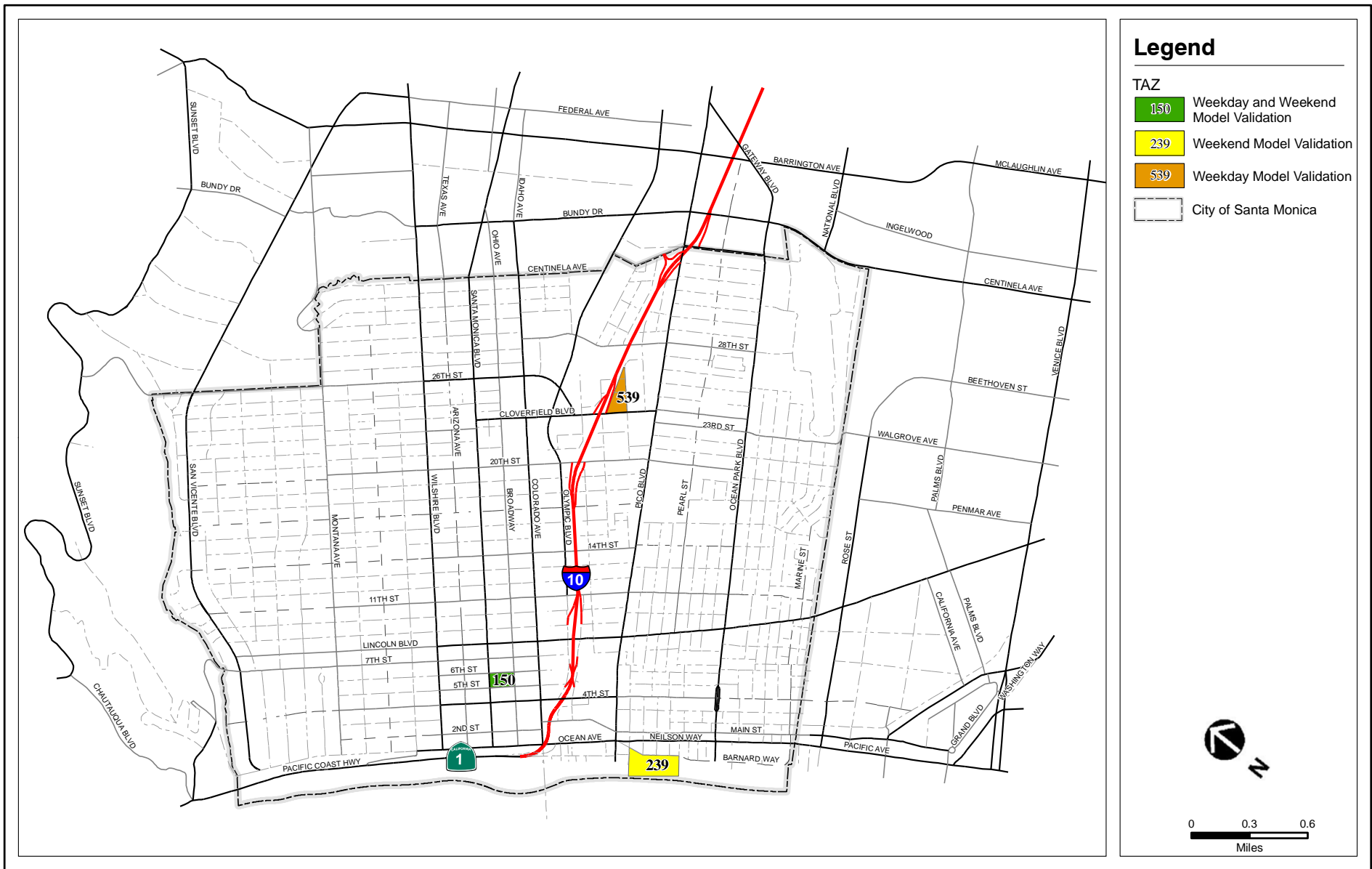
- Vehicle Trips (VT)
- Change in VT per land use unit change (VT/DU or KSF)
- Vehicle Miles Traveled (VMT)
- Change in VMT per land use unit change (VMT/DU or KSF)
- Vehicle Hours Traveled (VHT)
- Change in VHT per land use unit change (VHT/DU or KSF)
- Vehicle miles traveled per vehicle trip (VMT/VT)

This form of dynamic validation was performed on the Santa Monica model by adjusting the number of multi-family one car dwelling units and the retail development in TAZs 150 and 539. These zones were

selected due to their geographic location and the existing land use mix within the zone. To isolate each of these changes, tests were done sequentially, changing one item at a time.

Figure 5 shows the location of the zones that were used for dynamic validation. Zone 150 is located downtown near the intersection of 5th Street and Santa Monica Boulevard and contains a broad mix of residential and non-residential land uses. Zone 539 is located near Clover Park and contains only single-family dwelling units. The values added to a zone were selected based on adjacent land uses. The results are shown in Table 12.

- The change in VT per added DU ranges from 2.7 – 3.2. This is reasonable given the mix of land uses in the various zones and the different trip generation rates of each area type. Within each individual area type there is slight variability, showing stable trip generation across the range of land use magnitudes. The average vehicle trips per added DU are lower for zone 150 due to the abundance of other land uses for the residents to interact with.
- Adding a single DU to the model is a test of how much noise (random error) is in the model. Total VMT changed by between 7 and 25 vehicle miles per day per dwelling unit added, depending on the zone it was added to. Both zones showed a little noise when a single dwelling unit was added. However, both zones perform very well when a realistic quantity of development is added.
- The VHT per DU change is fairly stable around -3.0 to 1.4. There is some noise when adding a single dwelling unit to zone 539. Again, the noise at this extremely small level of change is no longer present for typical increases in the level of development.
- Adding retail land uses to either zone shows a high level of stability and logical results in all metrics. VT/KSF is lower downtown than in the zone near Clover Park, which would be expected given the character of the surrounding area. Similarly, VT/KSF generally declines with an increase in the quantity of retail land use added. Finally, VHT/KSF is greater downtown where travel is generally slower than in other parts of the City.



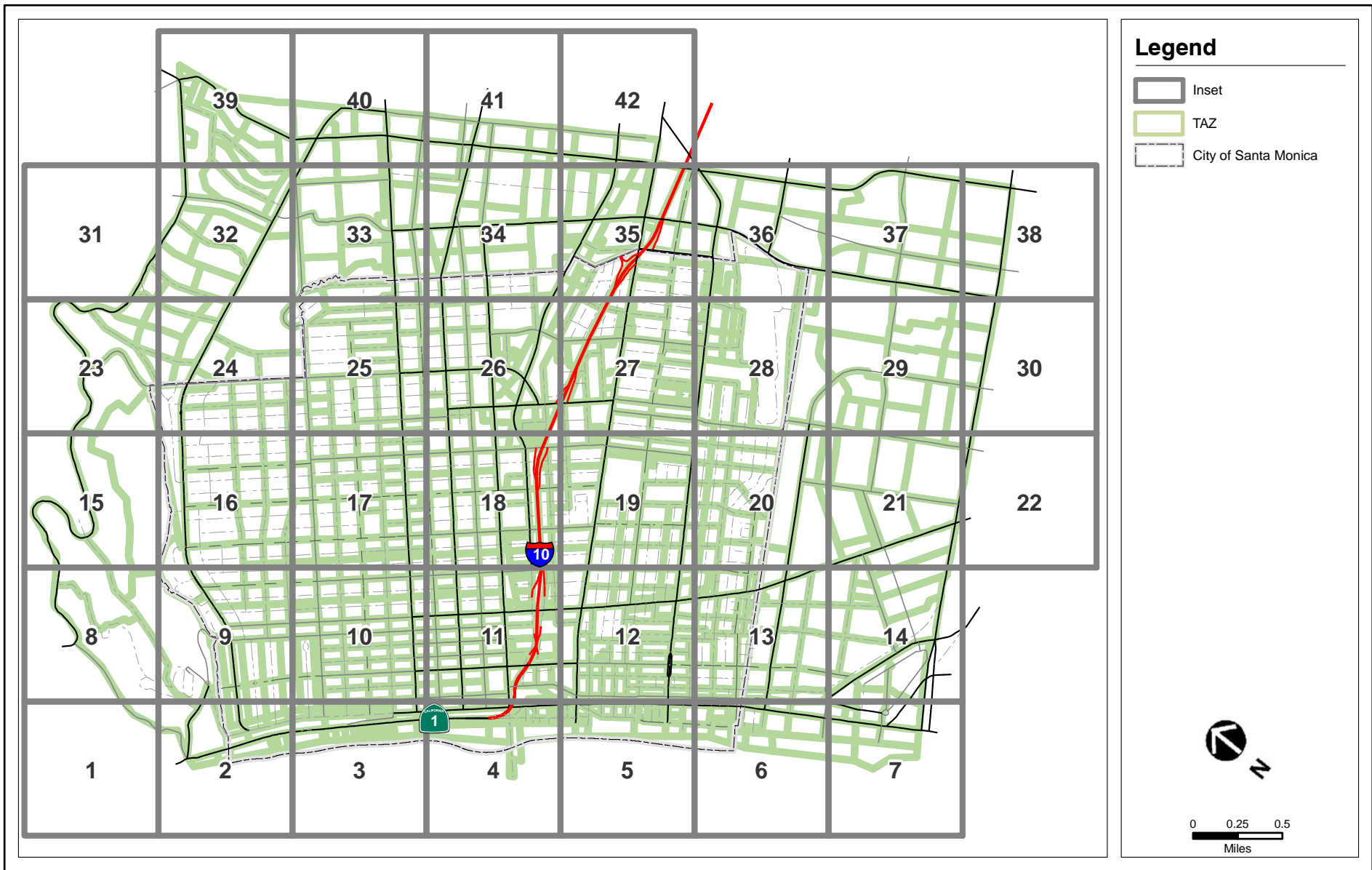
**TABLE 12
RESULTS OF DYNAMIC VALIDATION TESTS**

TAZ	Scenario	Vehicle Trips (VT) ¹	Change in VT/DU or KSF Change	Vehicle Miles Traveled (VMT) ¹	Change in VMT/DU or KSF Change	Vehicle Hours Traveled (VHT) ¹	Change in VHT/DU or KSF Change	VMT/VT
Residential Land Use Results - Multifamily Unit with 1 Car								
	Base Case	1,120,686	N/A	2,997,763	N/A	123,809	N/A	2.67
150 - Downtown	Added 1 DU	1,120,689	3.0	2,997,788	25.0	123,811	2.0	2.67
	Added 50 DUs	1,120,821	2.7	2,998,112	7.0	123,833	0.5	2.67
	Added 100 DUs	1,120,954	2.7	2,998,463	7.0	123,859	0.5	2.67
549 - Near Clover Park	Added 1 DU	1,120,689	3.0	2,997,775	12.0	123,806	-3.0	2.67
	Added 50 DUs	1,120,845	3.2	2,998,127	7.3	123,838	0.6	2.67
	Added 100 DUs	1,121,001	3.2	2,998,479	7.2	123,867	0.6	2.67
Retail Land Use Results								
	Base Case	1,120,686	N/A	2,997,763	N/A	123,809	N/A	2.67
150 - Downtown	Added 1 KSF	1,120,707	21.0	2,997,817	54.0	123,815	6.0	2.67
	Added 10 KSF	1,120,876	19.0	2,998,363	60.0	123,857	4.8	2.68
	Added 50 KSF	1,121,628	18.8	3,000,710	58.9	124,057	5.0	2.68
549 - Near Clover Park	Added 1 KSF	1,120,711	25.0	2,997,827	64.0	123,812	3.0	2.67
	Added 10 KSF	1,120,925	23.9	2,998,321	55.8	123,854	4.5	2.67
	Added 50 KSF	1,121,890	24.1	3,000,634	57.4	124,059	5.0	2.67

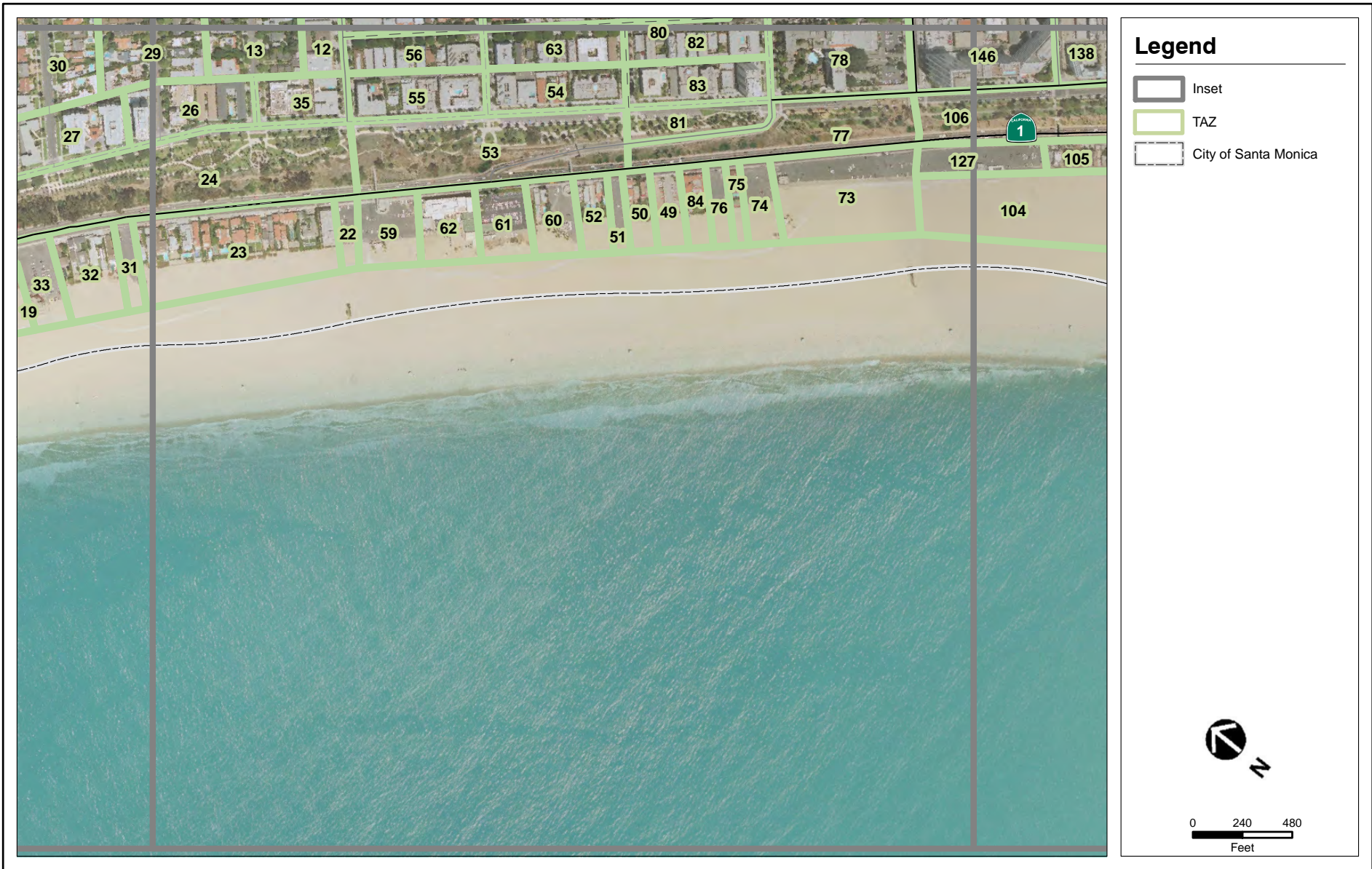
¹ VT, VMT, and VHT, as reported here, represent all model area trips on the model network, including through trips. This approach is taken to measure the effect of these changes on the model area as a whole. Performance measures reported in other documents using model data may differ in methodological approach.

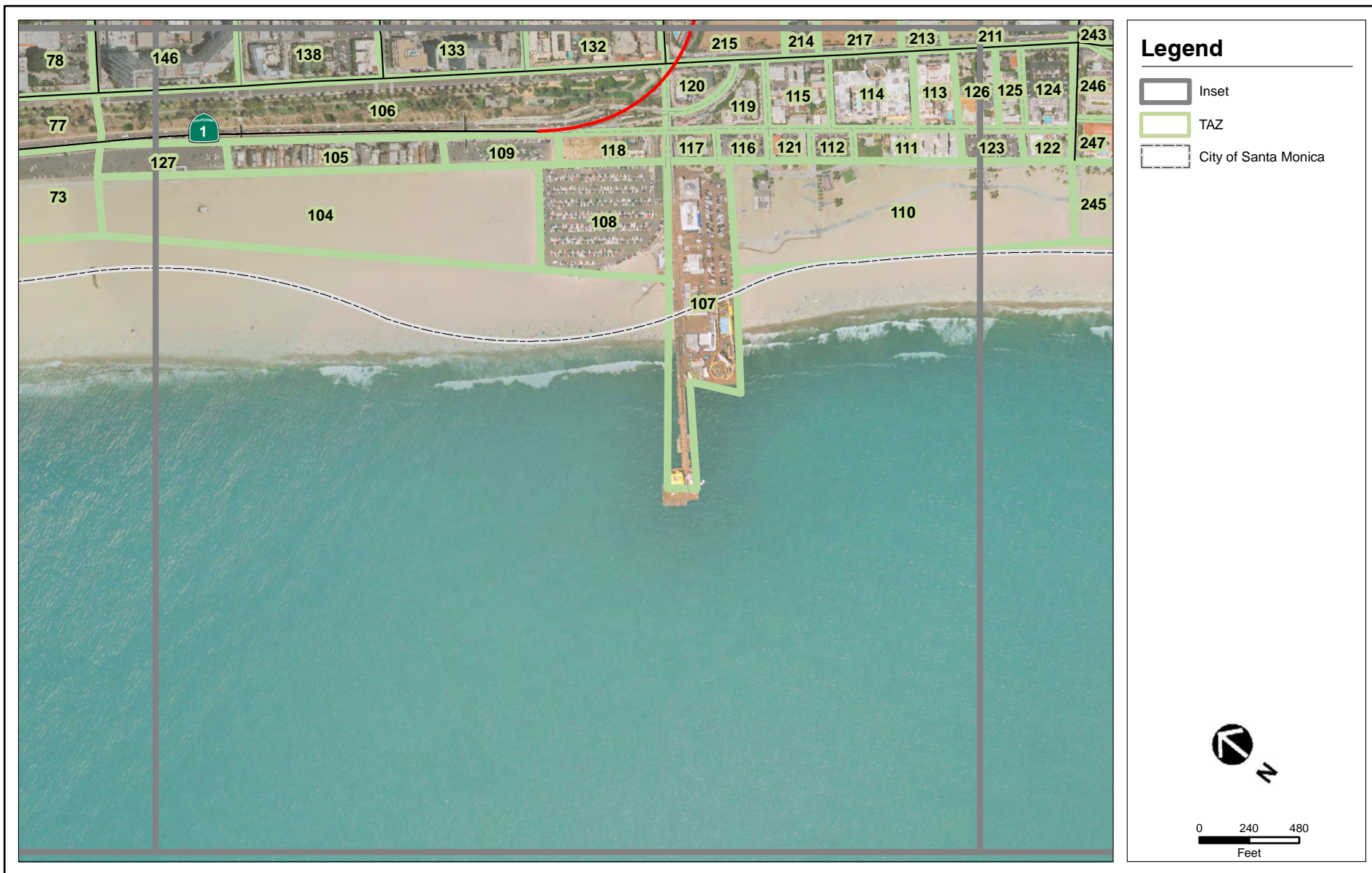
Source: Fehr & Peers, 2009.

**APPENDIX A:
TRAFFIC ANALYSIS ZONES KEY MAP**

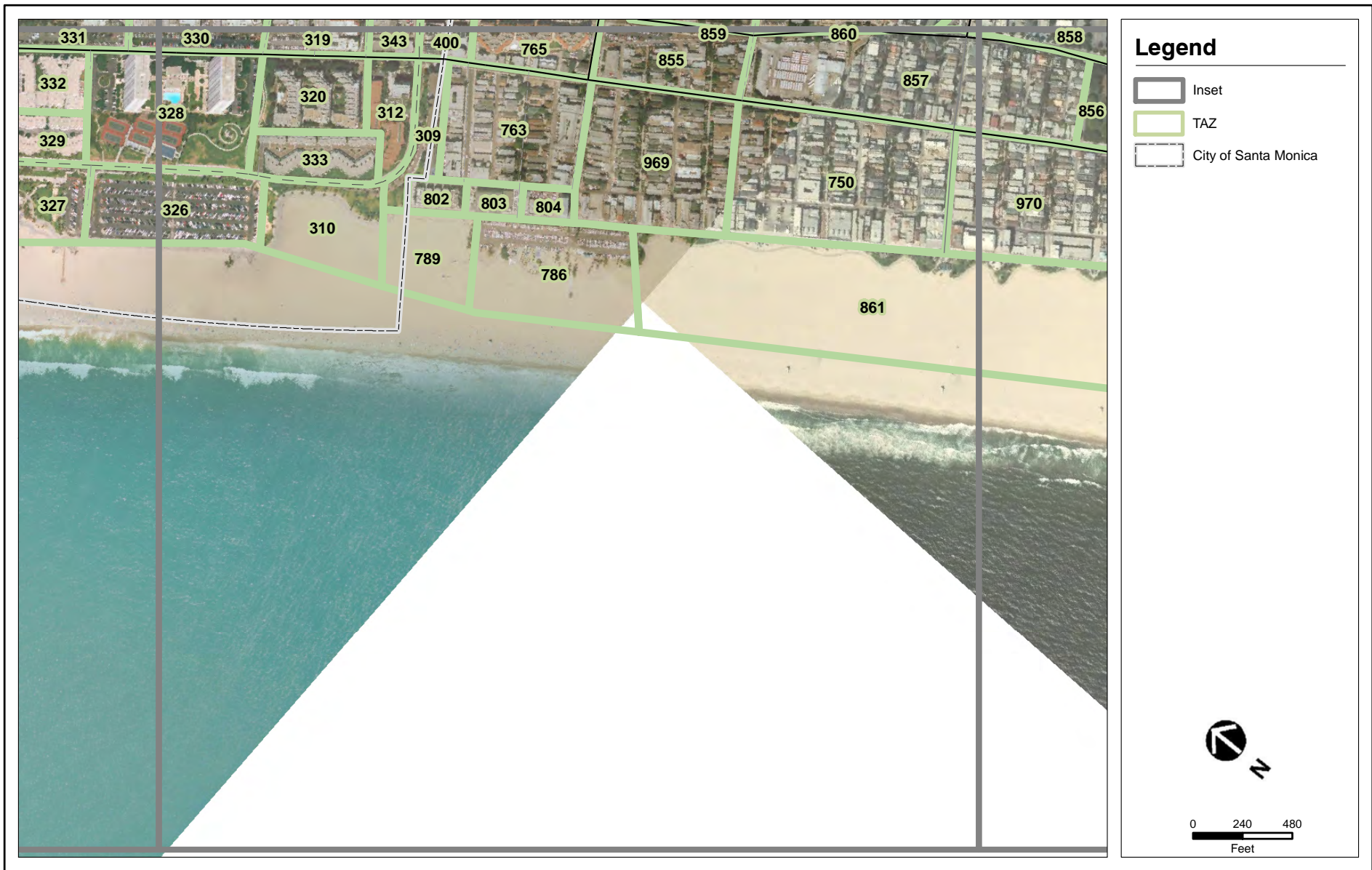


















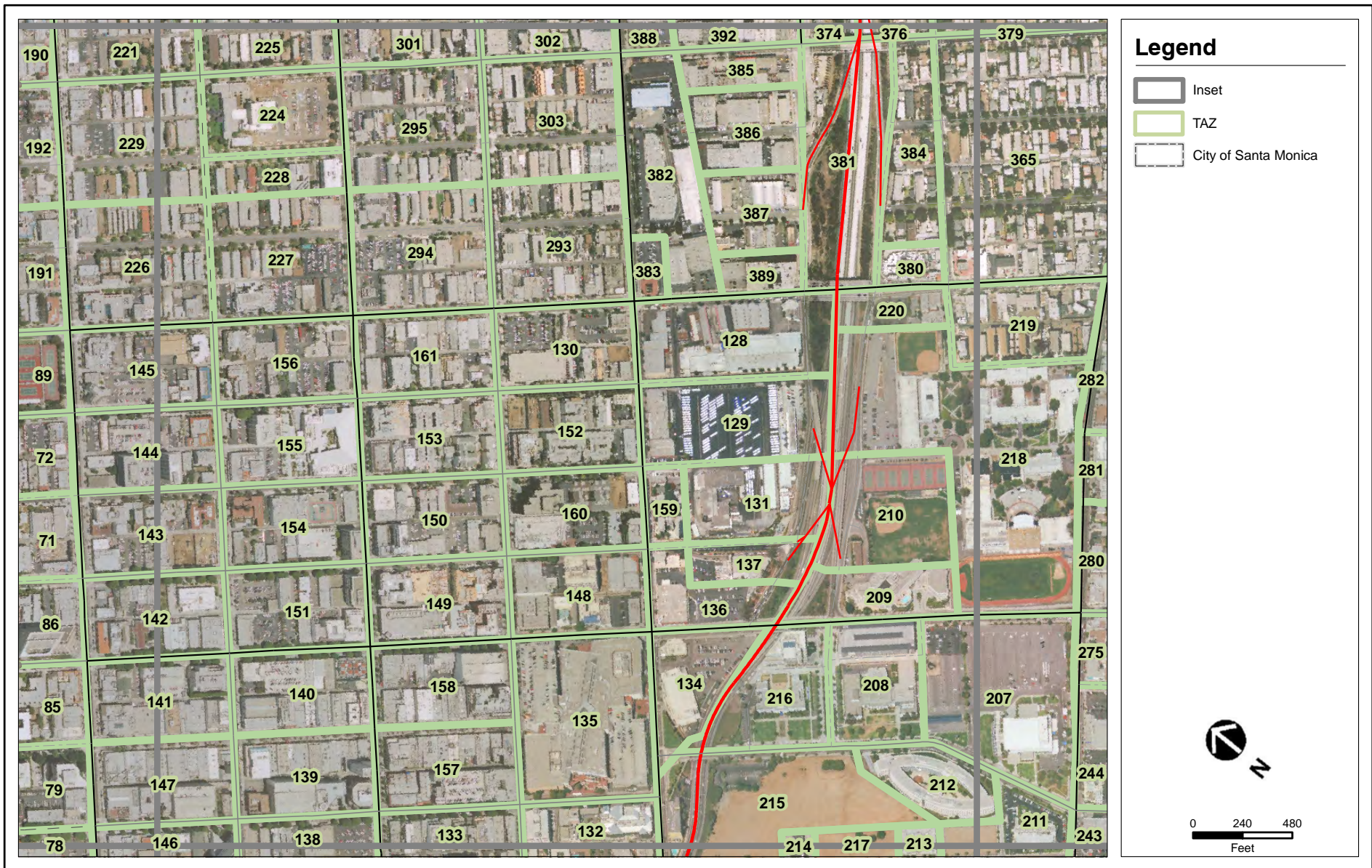
Legend

-  Inset
-  TAZ
-  City of Santa Monica



0 240 480
Feet







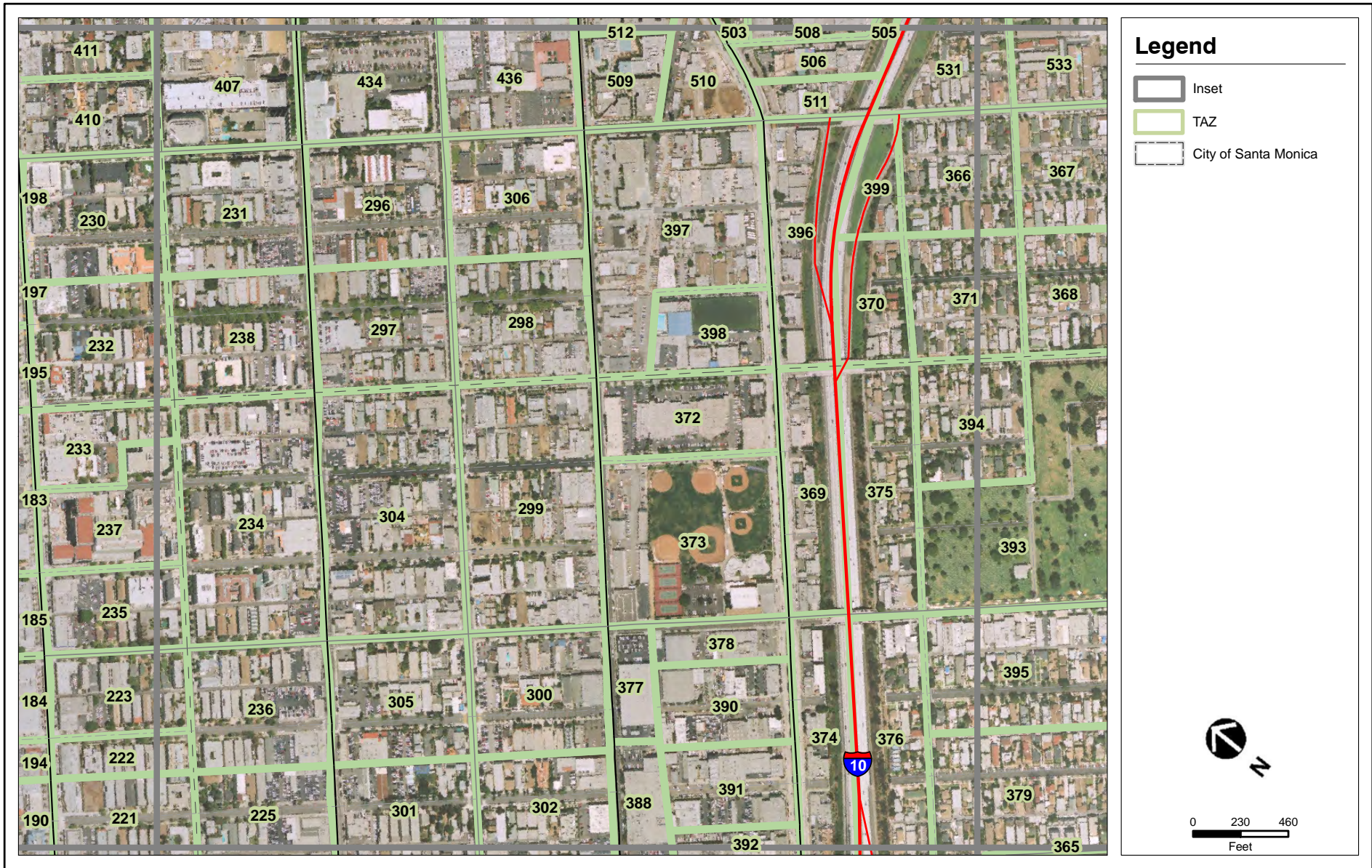








































FEHR & PEERS
TRANSPORTATION CONSULTANTS

TRAFFIC ANALYSIS ZONES
INSET 33



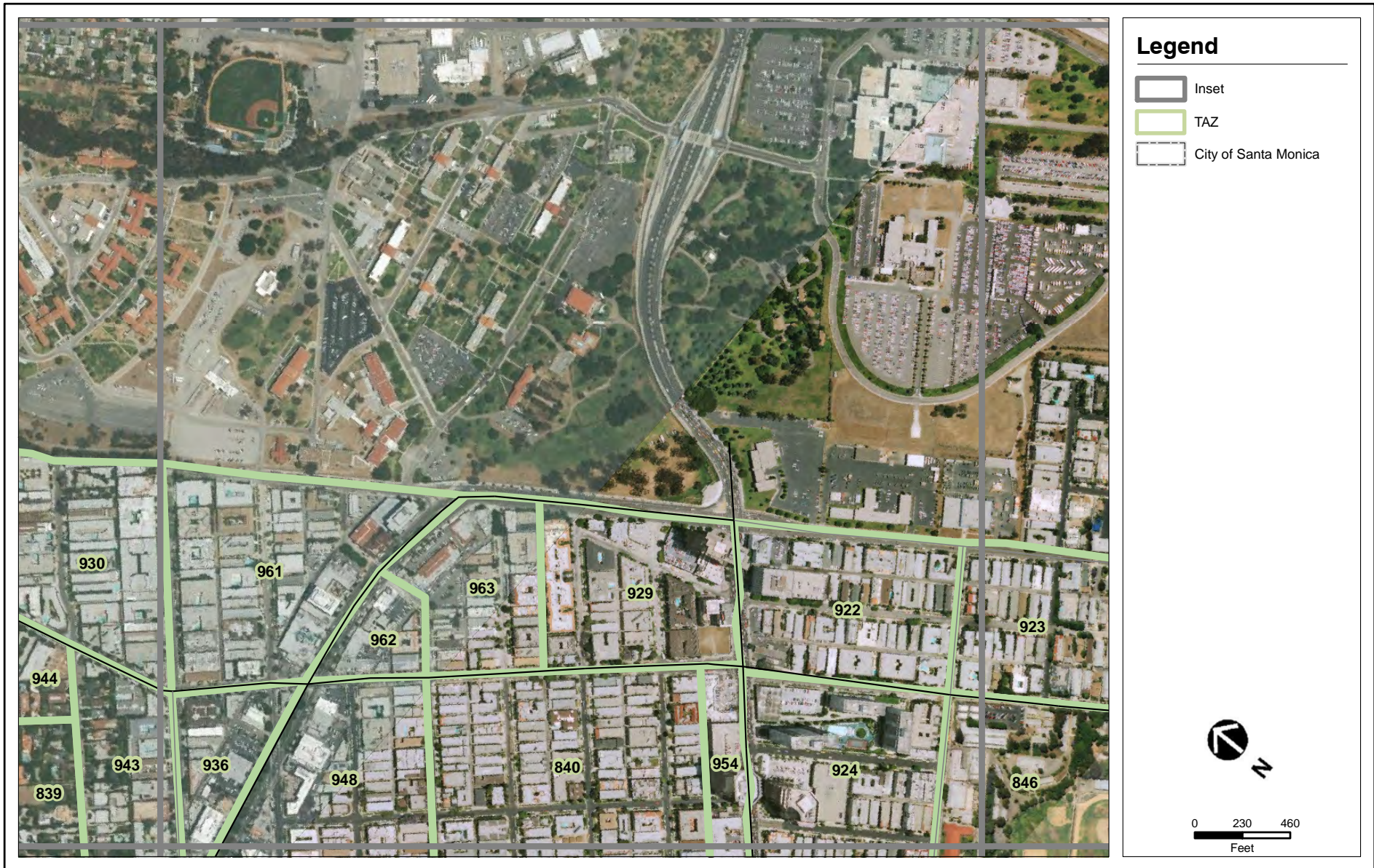


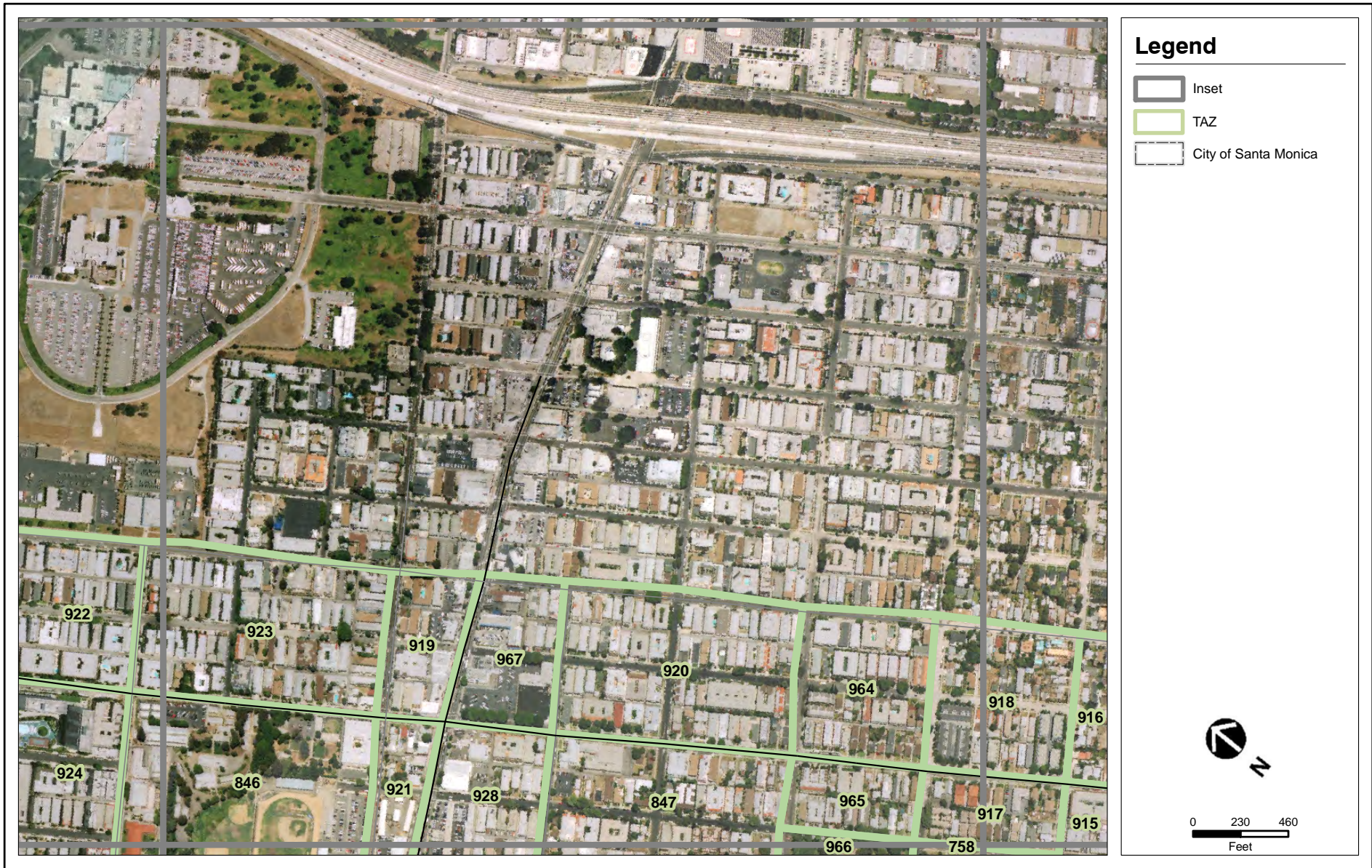








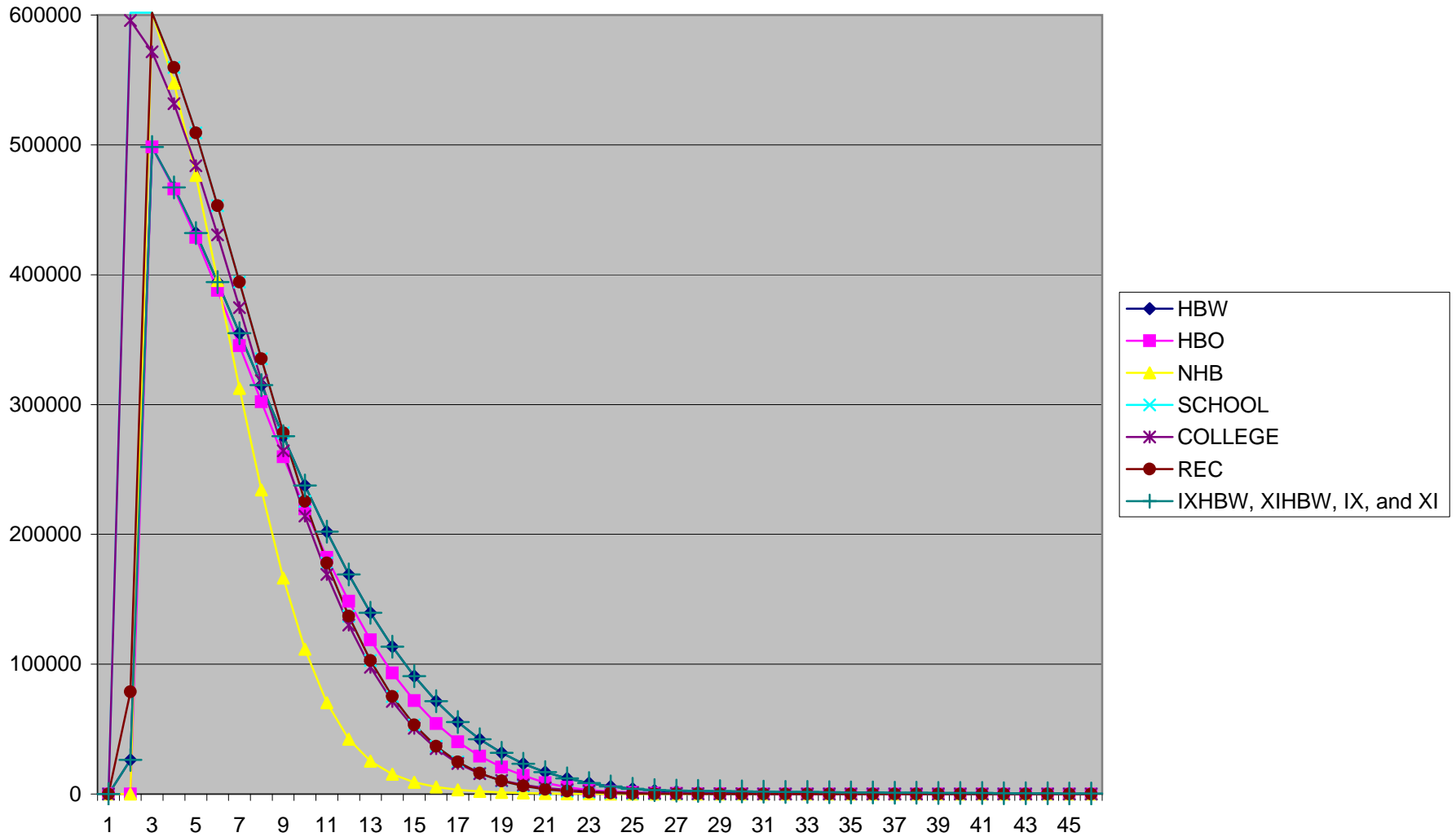






**APPENDIX B:
SANTA MONICA MODEL FRICTION FACTOR CURVES**

APPENDIX B Friction Factors





DRAFT MEMORANDUM

Date: April 10, 2015
To: Rachel Kwok, City of Santa Monica
From: Tom Gaul, Jeff Pierson, and Jill Liu, Fehr & Peers

Subject: *City of Santa Monica Travel Demand Forecasting Model Update Report*

Ref: SM13-2611

Fehr & Peers has completed a comprehensive update of the City of Santa Monica's Travel Demand Forecasting Model (TDFM). The base year of the model was upgraded from 2008 to 2013 conditions using network and land use information collected during fall 2013. The TAZ system was also updated to be consistent with the previously expanded TAZ system for the Bergamot Area Plan analysis. New traffic volumes were collected during this period to calibrate and validate the base year model.

The model framework was rewritten to run in an updated version of TransCAD (version 5.0 R4, build 2025). The model structure was also updated to make it easier to manage different scenarios (weekday and weekend) and forecast years (2013, 2025, and 2030). Assignment options can now be selected from directly within the new model interface. In addition, several preparation procedures that were previously calculated outside of the model have been incorporated into the model framework to reduce the number of steps required to run the model.

As part of the model update, Fehr & Peers used the best available tools to prepare and analyze the results from the model. The Southern California Association of Governments (SCAG) 2012 Regional Transportation Plan (RTP) model provided information about the land use and trips outside of the City of Santa Monica. The City's TRAFFIX database, which was used to analyze intersection level of service (LOS), has been upgraded to PTV's VISTRO platform to incorporate more robust signal timing information and to use the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2010) LOS methodology. Finally, the greenhouse gas (GHG) emissions calculations are now done in the latest version of the EMFAC software (EMFAC2011-SG) provided by California Environmental Protection Agency's Air Resources Board.



BACKGROUND

The City of Santa Monica Travel Demand Forecasting Model was originally developed in 2009 to analyze the potential impacts of the 2030 Land Use and Circulation Element (LUCE). The development of and calibration of this model was documented in *Santa Monica LUCE Model Development Report* (Fehr & Peers, December 2009). Since the development of the original 2008 and 2030 weekday models, weekend models as well as several interim year development review models were also developed. The 2030 planning scenario model has also been used to analyze the potential impacts of both the Bergamot Area Plan and the Downtown Specific Plan. Significant network enhancements were made for both of these projects to improve the quality of the model results.

The purposes of this model update were numerous:

- Update the base year of the model to 2013 conditions
- Merge all model years and scenarios into a consistent framework
- Incorporate the latest regional assumptions from the SCAG 2012 RTP
- Upgrade the model interface to run in a more recent version of TransCAD
- Combine all previous model improvements into the base year model
- Streamline the model preparation process to decrease model run time
- Use the latest tools to prepare model inputs and analyze results (TDM+ and EMFAC2011)

BASE YEAR MODEL INPUT DATA

The data that were used as inputs to the updated model were collected in September 2013. Traffic counts were collected during this time by both Fehr & Peers and the City of Santa Monica. The City also provided information on land use and street network changes that had occurred since the 2008 model was developed. Information on land use and street network changes outside the City of Santa Monica was collected from the 2012 SCAG RTP.

Land Use Data

The City of Santa Monica maintains a parcel database with information on existing land use quantities. Fehr & Peers was provided with the changes in land use since the 2008 survey was conducted. The changes include both demolition and construction of new projects. These changes by land use category are shown in Table 1.

In addition to land use within the City of Santa Monica, the model also includes land use information for the neighborhoods bordering the City, within one mile of the city limits. This data is compiled from the most recent version of the SCAG RTP model and was disaggregated to match the Traffic Analysis Zone (TAZ) system in the City's model. The land uses changes for these areas are also shown in Table 1.



TABLE 1. BASE YEAR MODEL LAND USE COMPARISON

Land Use Category	Units	2008	2013	Delta
<i>City of Santa Monica</i>				
Single-family	Dwelling Units	7,584	7,565	-19
Multi-family	Dwelling Units	41,086	41,625	539
Convalescent Care	Dwelling Units	366	366	0
<i>Residential Subtotal</i>	<i>Dwelling Units</i>	<i>49,036</i>	<i>49,556</i>	<i>520</i>
Office	Thousand Square Feet	10,271	10,281	10
Creative Office	Thousand Square Feet	3,483	3,877	394
Government Office	Thousand Square Feet	416	389	-27
Medical Office	Thousand Square Feet	2,058	2,052	-7
Hospital	Thousand Square Feet	958	1,185	226
Retail	Thousand Square Feet	3,485	3,715	230
Personal Services	Thousand Square Feet	2,110	1,939	-171
Cultural	Thousand Square Feet	494	541	48
Entertainment	Thousand Square Feet	765	780	14
Nightlife	Thousand Square Feet	72	53	-19
Restaurant	Thousand Square Feet	1,177	1,240	63
Automotive	Thousand Square Feet	57	55	-2
Lodging	Thousand Square Feet	1,157	1,196	39
Religious	Thousand Square Feet	219	220	1
Police and Fire	Thousand Square Feet	226	226	0
Light Industrial	Thousand Square Feet	1,553	1,547	-5
Heavy Industrial	Thousand Square Feet	142	127	-15
<i>Employment Subtotal</i>	<i>Thousand Square Feet</i>	<i>28,643</i>	<i>29,423</i>	<i>780</i>
K-8 School	Students	8,391	8,391	0
High School	Students	4,148	4,148	0
College	Students	30,000	30,000	0
Airport	Based Aircraft	500	500	0
Recreation	Acres	328	321	-7
<i>Adjacent Neighborhoods</i>				
Residential	Dwelling Units	40,738	40,669	-69
Office	Employees	32,733	30,440	-2,293
Retail	Employees	3,993	3,917	-76
Industrial	Employees	4,585	3,814	-771
Education	Employees	5,854	5,458	-396
<i>Employment Subtotal</i>	<i>Employees</i>	<i>47,165</i>	<i>43,629</i>	<i>-3,536</i>



The land use changes within the City of Santa Monica show a 1 percent increase in dwelling units and a 3 percent increase in employment between 2008 and 2013. For the model area outside of the City, the SCAG 2012 RTP data shows a decrease in the number of dwelling units by less than half a percent and a decrease in the number of employees by 7 percent. This change likely reflects a refinement in how SCAG estimates total employment rather than an indication that the actual number of employees has decreased. Another change not shown in the table is the classification of households in the SCAG model. The 2012 RTP separates single-family and multi-family households for the first time. This information allows a better estimate of the number of vehicle trips generated outside the City since single-family homes generate more vehicle trips than multi-family homes. Combined with the decrease in employment, the net impact of these two changes from the SCAG data is fewer vehicle trips generated in the portion of the model outside the City of Santa Monica.

Traffic Analysis Zone System

Travel demand models use TAZs to subdivide the study area to connect land uses to the street network. TAZs represent physical areas that contain land uses that produce or attract vehicle trips ends. The 2008 model included 599 TAZs in the City of Santa Monica and 225 TAZs for the areas outside of the City. The number of TAZs in Santa Monica was increased to 612 in the 2030 forecast model used to analyze the Bergamot Area Plan.

For this model update, those TAZ changes were replicated in the new 2013 model to provide consistency between the base and future scenarios. The boundaries of TAZs around Tongva Park were adjusted to better align with the development that has occurred since 2008. A single TAZ was also added in this area to separate the land uses north and south of the I-10 freeway. The final number of TAZs that represent the City of Santa Monica in the new 2013 model is 613. The number of TAZs outside the City was unchanged.

Street Network

The model street network includes all freeways, state highways, arterials, collectors, and local roads within the study area. Modifications to the street network were made to incorporate changes that occurred between 2008 and 2013. The final street network used in the model is consistent with the roadway network when traffic counts were collected in September 2013. Any lane reductions or turn restrictions associated with construction activities at that time were included in the model. The network was modified to reflect changes associated with the following projects:

- Construction of Metro Expo Light Rail Line extension along Colorado Avenue
- Median installation along Ocean Avenue between Olympic Boulevard and Pico Boulevard
- Removal of on-street parking to provide a second travel lane on westbound Santa Monica Boulevard between 2nd Street and 5th Street
- Santa Monica Place renovation



Each street in the model is coded with free flow speed, hourly capacity, and the number of lanes. While the land use data and TAZ system are consistent across all scenarios, the attributes of the street network can vary by time of day or day of the week across the five analysis periods in the model:

- Weekday: Daily, AM Peak Hour, and PM Peak Hour
- Saturday: Daily and Midday (MD) Peak Hour

Within the model area, there are only two locations where the number of travel lanes changes throughout the day. There are weekday peak hour parking restrictions on:

- Wilshire Boulevard between Centinela Avenue and Barrington Avenue
- Santa Monica Boulevard between Bundy Drive and Barrington Avenue

Other network attributes are adjusted during the calibration process for each time period to reflect actual conditions at specific locations.

BASE YEAR MODEL CALIBRATION

A travel model is calibrated by adjusting certain parameters to match travel estimates from the model with data from the actual area being modeled. Parameters from the 2008 calibrated model were used as starting points and only adjusted when necessary.

Trip Generation

Trip generation rates relate the number of vehicle trips going to and from a site to some measure of the intensity of use at the site. Each trip has two ends: a production and an attraction. By convention, trips with one end at a residence are defined as being produced by the residence and attracted to the other use (workplace, school, shopping, etc.) and are called home-based trips. Trips that do not have one end at a residence are called non-home-based trips. There are six trip purposes used in the model:

- Home-based work (HBW) trips are between a residence and a workplace
- Home-based other (HBO) trips are between a residence and any other destination
- Non-home-based (NHB) trips do not begin or end at a residence
- School (SCHOOL) trips are to or from a K-12 school
- College (COLLEGE) trips are to or from a college or university
- Recreational (REC) trips are to or from parks and beaches

School, college, and recreational trips are a type of home-based other trip and have been separated in the model to better calibrate those trip purposes. For each land use type, the total daily trips are divided among the six trip purposes. While the trip rates are consistent between the 2008 and 2013 models, the trip purpose percentages were slightly adjusted to balance the total production trip ends and attraction



trip ends for each purpose. Table 2 shows the percent of daily vehicle trips by purpose for both 2008 model and the 2013 model.

TABLE 2. BASE YEAR DAILY TRIP PURPOSE PERCENTAGES

Purpose	2008 Weekday	2013 Weekday	2008 Saturday	2013 Saturday
Home-based work	25%	26%	8%	8%
Home-based other	42%	41%	55%	53%
Non-home-based	27%	26%	28%	28%
School	3%	3%	0%	0%
College	3%	3%	0%	0%
Recreation	1%	1%	9%	10%

The table shows consistent results between the two models, which is expected since only minor changes in land use occurred between 2008 and 2013. In both models, the Saturday scenario has fewer home-based work, school, and college trips than the weekday scenario. There are corresponding increases in home-based other and recreation trips.

Trip generation rates are defined for daily total trips by land use type and then split among the various trip purposes and analysis periods. The model uses different trip rates for the weekday and weekend scenarios. The daily trip generation rates in the 2008 weekday model were developed from a variety of sources. These included residential trip generation surveys, the *Trip Generation, 8th Edition* (ITE, 2008) the 2008 SCAG RTP model, a San Diego Association of Governments (SANDAG) trip generation survey, and other calibrated models within Los Angeles County developed by Fehr & Peers. The daily trip generation rates in the 2008 Saturday model were primarily developed using information from *Trip Generation, 8th Edition*.

After reviewing the daily trip generation rates by land use type, it was determined that no substantial changes had occurred since the rates were initially developed that would justify changing the values for the 2013 model. Tables 3 and 4 show the trip generation rates for the weekday and Saturday scenarios. There are four area types in the model, which allows different trip rates to be assigned based on specific development patterns with different land use characteristics and trip making patterns. Area 1 is Downtown Santa Monica and the Special Office District. Area 2 is the remaining residential and commercial areas of Santa Monica. Area 3 is the coastal area and Area 4 is outside the City of Santa Monica.



TABLE 3. BASE YEAR WEEKDAY DAILY VEHICLE TRIP GENERATION RATES

Land Use Category	Units	Area 1	Area 2	Area 3	Area 4
<i>City of Santa Monica</i>					
Single-family	Dwelling Units	10.0			-
Multi-family, zero cars	Dwelling Units	1.6	2.2	-	
Multi-family, one car	Dwelling Units	3.2	3.9	-	
Multi-family, two or more cars	Dwelling Units	5.5	6.5	-	
Convalescent Care	Dwelling Units	-	2.0	-	
Office	Thousand Square Feet	10.0	10.5	-	
Creative Office	Thousand Square Feet	9.0		-	
Government Office	Thousand Square Feet	36.0	80.0	-	
Medical Office	Thousand Square Feet	30.0		-	
Hospital	Thousand Square Feet	-	16.5	-	
Retail	Thousand Square Feet	29.8	41.0	38.8	-
Personal Services	Thousand Square Feet	20.0	44.3		-
Cultural	Thousand Square Feet	29.8		-	
Entertainment	Thousand Square Feet	36.0	40.0		-
Nightlife	Thousand Square Feet	21.8			-
Restaurant	Thousand Square Feet	80.0	82.0	80.0	-
Automotive	Thousand Square Feet	152.8		-	
Lodging	Thousand Square Feet	1.9			-
Religious	Thousand Square Feet	9.1		-	
Police and Fire	Thousand Square Feet	6.3			-
Light Industrial	Thousand Square Feet	1.5		-	
Heavy Industrial	Thousand Square Feet	-	1.5	-	
K-8 School	Students	1.3		-	
High School	Students	-	1.7	-	
College	Students	-	1.2	-	
Airport	Based Aircraft	-	5.0	-	
Recreation	Acres	27.5	28.0	52.5	-
<i>Adjacent Neighborhoods</i>					
Single-family	Dwelling Units	-		10.0	
Multi-family	Dwelling Units	-		3.9	
Office	Employees	-		2.9	
Retail	Employees	-		16.5	
Industrial	Employees	-		1.2	
Education	Employees	-		1.5	



TABLE 4. BASE YEAR SATURDAY DAILY VEHICLE TRIP GENERATION RATES

Land Use Category	Units	Area 1	Area 2	Area 3	Area 4
<i>City of Santa Monica</i>					
Single-family	Dwelling Units	9.3		9.8	-
Multi-family, zero cars	Dwelling Units	1.5	2.1	2.0	-
Multi-family, one car	Dwelling Units	3.1	3.6	3.4	-
Multi-family, two or more cars	Dwelling Units	5.2	6.0	5.7	-
Convalescent Care	Dwelling Units	-	1.7	1.4	-
Office	Thousand Square Feet	1.5	1.1	-	
Creative Office	Thousand Square Feet	4.5	1.4	-	
Government Office	Thousand Square Feet	7.2	16.0	-	
Medical Office	Thousand Square Feet	7.5		-	
Hospital	Thousand Square Feet	-	10.2	-	
Retail	Thousand Square Feet	40.2	45.1	45.0	-
Personal Services	Thousand Square Feet	27.0	44.3		-
Cultural	Thousand Square Feet	24.7	22.3	18.5	-
Entertainment	Thousand Square Feet	48.6	56.0	38.0	-
Nightlife	Thousand Square Feet	43.5		87.1	-
Restaurant	Thousand Square Feet	96.0	98.4	96.0	-
Automotive	Thousand Square Feet	152.8		-	
Lodging	Thousand Square Feet	1.9			-
Religious	Thousand Square Feet	10.4		-	
Police and Fire	Thousand Square Feet	6.3			-
Light Industrial	Thousand Square Feet	0.3		-	
Heavy Industrial	Thousand Square Feet	-	0.3	-	
K-8 School	Students	0.5		-	
High School	Students	-	0.6	-	
College	Students	-	0.4	-	
Airport	Based Aircraft	-	3.7	-	
Recreation	Acres	68.8		48.0	-
<i>Adjacent Neighborhoods</i>					
Single-family	Dwelling Units	-	-	9.8	9.3
Multi-family	Dwelling Units	-	-	3.4	3.6
Office	Employees	-	-	0.1	
Retail	Employees	-	-	20.1	19.0
Industrial	Employees	-	-	0.0	
Education	Employees	-	-	0.5	



Trip Distribution

Trip generation determines the number of trips that begin and end in each TAZ. Trip distribution determines the specific destination of each origin trip. The trip distribution model uses a gravity model equation to distribute trips to all zones. This equation estimates an accessibility index based on the travel time between zones and a friction factor to distribute trips. The friction factor relates the attractiveness between zones to the travel times. These are developed based on information from the SCAG regional model and research from the National Cooperation Highway Research Program (NCHRP).

The gravity model can only be applied to trips which begin and end within the model study area. These are referred to as internal-internal (I-I) trips. Trips which begin or end outside of the model area are referred to as internal-external (I-X) trips or external-internal (X-I) trips. Trips which pass through the model area without stopping are referred to external-external (X-X) trips.

Since the gravity model can only be applied to I-I trips, the number of I-X and X-I trips must be determined before the model can be run. These percentages are determined for each purpose and are based on information from the U.S. Census Bureau and the SCAG regional model. Information from the 2010 Census and the Longitudinal-Employer Household Dynamics (LEHD) Program shows that 20 percent of Santa Monica residents work within Santa Monica and only 14 percent of Santa Monica employees live within Santa Monica. Table 5 shows the final internal (I-I) and external (I-X and X-I) split for all six trip purposes for the 2008 and 2013 weekday and Saturday scenarios.

TABLE 5. BASE YEAR DAILY TRIP DISTRIBUTION PERCENTAGES (INTERNAL/EXTERNAL)

Purpose	2008 Weekday	2013 Weekday	2008 Saturday	2013 Saturday
Home-based work	17% / 83%	16% / 84%	12% / 88%	11% / 89%
Home-based other	31% / 69%	30% / 70%	26% / 74%	25% / 75%
Non-home-based	64% / 36%	62% / 38%	50% / 50%	46% / 54%
School	83% / 17%	81% / 19%	80% / 20%	85% / 15%
College	28% / 72%	28% / 72%	27% / 73%	34% / 66%
Recreation	18% / 82%	16% / 84%	20% / 80%	20% / 80%
All Trips	38% / 62%	37% / 63%	31% / 69%	29% / 71%

The distributions were determined based on several criteria. The initial estimates were based on information from NCHRP and the SCAG regional model. These estimates were further refined to ensure that the all production trip ends have an attraction trip end for internal-internal trips. For example, before balancing, the model area has over 2.5 times more HBW attraction trip ends than production trip ends. The final step in balancing the internal/external splits checks that the total volume at each of the external model gateways matches the observed count data. There are 22 gateways in the model, including the I-10 freeway. External-external trips are determined from the SCAG regional model and are adjusted to ensure consistency with observed count data and internal-external and external-internal trips.



Trip Assignment

The trip assignment process determines the routes that each vehicle trip takes from its origin to its destination. The model assignment algorithm determines paths based on the shortest travel time between two locations, while taking into account congested delays. The model uses an iterative procedure until a specified convergence criterion is met or the total iterations are completed.

Calibration of the street network included adjusting the locations where TAZs connect to the network to more accurately reflect travel behavior and vehicle access points. Free flow speeds and roadway capacities were adjusted to model the attractiveness of given facilities and the prevailing speed of traffic. The adjustments were also based on the presence of design characteristics that may reduce vehicle speeds or capacities such as lane widths, bike lanes, on-street parking, or mid-block crosswalks.

BASE YEAR MODEL VALIDATION

Model validation compares the model's estimated results to observed travel data. During the model development process, this data is used to further calibrate the model inputs. The extent to which model results match observed travel data validates the assumptions of the input parameters.

Static Validation

The most critical static measurement of the accuracy of any travel model is the degree to which it can approximate observed traffic counts during the base year. Caltrans has established certain trip assignment guidelines in *Travel Forecasting Guidelines* (Caltrans, 1992). These requirements are listed below:

- At least 75 percent of the roadway links for which counts are available should be within the maximum desirable deviation, which ranges from 15 percent to 60 percent (the larger the volume, the less deviation permitted)
- All of the roadway screenlines should be within the maximum desirable deviation, which ranges from 15 percent to 64 percent (the larger the volume, the less deviation permitted)
- The two-way sum of the volumes on all roadway links for which counts are available should be within 10 percent of the count volume
- The correlation coefficient between the volumes on all roadway links for which counts are available and the observed counts should be greater than 0.88

Although not stated in the Caltrans guidelines, an additional Fehr & Peers validation requirement is that the percent root mean square error (RMSE) should be less than 40 percent.



Screenlines are boundaries drawn across a street network to determine the total volume crossing the boundary. Screenline accuracy determines whether the volume moving across the model area is consistent with the observed volumes. The following screenlines were used for model validation:

- Marguerita Avenue
- Washington Avenue
- Wilshire Boulevard
- Arizona Avenue
- Santa Monica Boulevard
- Colorado Avenue
- Olympic Boulevard
- Pico Boulevard
- Pearl Street
- Ocean Park Boulevard
- 4th Street
- Lincoln Boulevard
- 14th Street
- Cloverfield Boulevard
- 26th Street
- Bundy Avenue & Centinela Avenue

Three weekday scenarios (daily, AM peak hour, and PM peak hour) and two Saturday scenarios (daily and midday [MD] peak hour) were statically validated. The validation results are shown in Tables 6 and 7. The number of observed count locations is also shown for each scenario.

TABLE 6. WEEKDAY SCENARIOS VALIDATION RESULTS

Metric	Criterion	Daily	AM Peak Hour	PM Peak Hour
Observed locations	-	217	217	217
Percent of links within max dev.	At least 75%	76%	75%	75%
Percent of screenlines within max dev.	100%	100%	100%	100%
Deviation of two-way sum of all links	Within 10%	5%	7%	9%
Correlation coefficient	Greater than 0.88	0.96	0.93	0.94
Percent RMSE	Less than 40%	22%	30%	32%

TABLE 7. SATURDAY SCENARIOS VALIDATION RESULTS

Metric	Criterion	Daily	MD Peak Hour
Observed locations	-	75	75
Percent of links within max dev.	At least 75%	75%	83%
Percent of screenlines within max dev.	100%	100%	100%
Deviation of two-way sum of all links	Within 10%	6%	1%
Correlation coefficient	Greater than 0.88	0.96	0.94
Percent RMSE	Less than 40%	19%	22%

The results from both tables show that all scenarios are statically validated.



Dynamic Validation

Static validation confirms the ability of a travel model to reasonably reproduce a static (singular) condition. Dynamic validation verifies the models applicability to changes in land use and the street network. The 2008 model was dynamically validated to changes in land use quantities. Since the development of the 2008 model, it has been routinely applied for project specific analyses. These projects have included both land use and network changes. Each of these applications has further proven the model to be dynamically valid for both types on input changes required of a travel model. For these reasons, no further dynamic testing was completed.

BASE YEAR MODEL RESULTS

The Land Use and Circulation Element (LUCE) that was adopted in 2010 established the following metrics to be analyzed for general plan consistency:

- Citywide PM peak hour vehicle trips
- Citywide vehicle miles travelled (VMT) per capita
- Citywide vehicle greenhouse gas (GHG) emissions
- AM and PM peak hour corridor travel times
- AM and PM peak hour intersection level of service (LOS)

The travel model produces the first four metrics and can be used to forecast turning movement volumes for future scenarios to calculate LOS. The results from the 2008 base year weekday model were used to establish baseline conditions for each of the metrics. These same metrics are reported from the new 2013 weekday scenarios.

Citywide PM Peak Hour Vehicle Trips

The 2008 base year weekday PM peak hour model produced 60,100 vehicle trips generated within the City of Santa Monica. These trips either originate from or are destined to a location within Santa Monica, or both. This total includes trips from outside the model area as well as the area outside the City but within the model that originate within or are destined to the City. The new 2013 base year weekday PM peak hour model produced 59,600 trips for the City of Santa Monica, a decline of 1 percent.

There are several factors that contribute to the 1 percent difference in PM peak hour trips generated within the City of Santa Monica. The increases in households and employment within the City generate more trip-ends. However, the decreases in employment in the model area outside the City reduce the number of trips generated in the portion of Los Angeles surrounding the City of Santa Monica. The net impact from these two changes is a slight decrease in trips entering Santa Monica from the model area outside the City. While minor, these differences contribute to the 1 percent difference. These results do



not necessarily indicate that the actual number of trips generated within the City of Santa Monica has decreased from 2008 to 2013.

Citywide Vehicles Miles Travelled

The model calculates daily vehicle miles travelled for all City of Santa Monica trips within the model area. The VMT per capita is calculated using total population and employment. Table 8 shows the VMT calculations for the 2008 and 2013 weekday daily scenarios.

TABLE 8. CITYWIDE VEHICLE MILES TRAVELLED

Scenario	VMT	Population	Employment	Total Service Population (Population + Employment)	VMT per Capita
2008 Weekday	2,038,000	95,247	94,206	189,453	10.8
2013 Weekday	1,970,000	92,484	98,280	190,764	10.3

The VMT estimates in the table above only calculate miles travelled within the model area. The mileage associated with trips after they leave the model is not accounted for in these estimates. As discussed, the estimate of total trips generated within the City decreased, which correlates with the decrease in vehicle miles travelled. VMT also decreases slightly because more trips are internalized within the City of Santa Monica compared with the 2008 weekday results. These trips stay within the model and have their destination within the City instead of the area outside the City.

Santa Monica staff provided an updated population estimate for 2013 that is less than the 2008 estimate. With an increase in employment between 2008 and 2013, the total service population (population and employment) increases by less than one percent. The decrease in VMT per capita (per service population) is thus primarily correlated with lower trip generation in areas outside the City. Again, these reductions do not necessarily indicate that VMT per capita has decreased within the City of Santa Monica between 2008 and 2013.

Citywide Vehicle Greenhouse Gas Emissions

EMFAC is a software tool developed by the California Air Resources Board (CARB) to estimate greenhouse gas emissions from VMT. Since the 2008 model was developed, CARB updated the software from EMFAC2007 to EMFAC2011. This comprehensive update dramatically streamlines the data input process and reduces the number of required inputs. The reported metrics also vary slightly between the two versions of the software.

EMFAC2011 requires total VMT and VMT by 5mph speed bin to estimate GHG emissions. The vehicle average fleet mix for Los Angeles County is included in the software and was used for this analysis. The average speed profile from the model was applied to all vehicles types. Table 9 shows the weekday daily



GHG estimates for the 2008 and 2013 models. 2008 results are calculated in EMFAC2007 and 2013 results are calculated in EMFAC2011.

TABLE 9. CITYWIDE VEHICLE GREENHOUSE GAS EMISSIONS

Scenario	2008 Daily	2013 Daily
EMFAC Vehicle Fleet Analysis Year	2008	2013
Carbon Dioxide (CO ₂) (tons/day)	1,490	1,171
Carbon Dioxide (CO ₂) (Pavley) (tons/day)	-	1,111
Carbon Monoxide (CO) (tons/day)	16.93	7.02
Nitrous Oxides (NO _x) (tons/day)	3.03	1.72
Sulphur Oxides (SO _x) (tons/day)	0.01	0.010
Total Organic Gases (TOG) (tons/day)	2.31	0.83
Reactive Organic Gases (ROG) (tons/day)		0.76
Particulate Matter (<10 microns) (tons/day)	0.13	0.14
Particulate Matter (<2.5 microns) (tons/day)	-	0.070
Gasoline Fuel Consumed (gallons/day)	-	102,239
Diesel Fuel Consumed (gallons/day)	-	15,200

While the total daily VMT estimated by the model decreased by 3 percent, this does not solely account for the magnitude of the differences in GHG results between 2008 and 2013. The reason for the discrepancies is more likely due to changes in the EMFAC software and assumptions internal to the program.

AM and PM Peak Hour Corridor Travel Times

Fifteen corridors throughout Santa Monica have been identified for calculation of travel time during the PM peak hour. The congested travel times from the model provide an estimate of overall corridor travel time; however, the model has not been calibrated or validated to these measurements. The model only calculates link level delay and does not include delay associated with signalized or unsignalized intersections. Table 10 shows the AM and PM peak hour travel times for the selected corridors. Separate travel times are provided for each direction of travel.



TABLE 10. WEEKDAY PEAK HOUR CORRIDOR TRAVEL TIMES (MINUTES)

Corridor	From	To	2008 Weekday		2013 Weekday	
			NB/EB	SB/WB	NB/EB	SB/WB
<i>AM Peak Hour</i>						
San Vicente Blvd	Ocean Ave	26 th St	3:25	3:25	3:30	3:30
Montana Ave	Ocean Ave	Stanford Ave	4:40	4:40	4:25	4:30
Wilshire Blvd	Ocean Ave	Centinela Ave	5:30	5:40	5:10	5:20
Santa Monica Blvd	Ocean Ave	Centinela Ave	5:15	5:35	5:10	5:25
Olympic Blvd	Lincoln Blvd	Centinela Ave	3:40	4:25	3:45	4:20
I-10 / PCH	Chautauqua Blvd	Bundy Dr	6:35	6:10	6:25	6:20
Pico Blvd	Ocean Ave	Centinela Ave	4:40	5:15	4:50	5:10
Ocean Park Blvd	Neilson Way	Centinela Ave	5:05	5:05	5:15	5:20
Ocean Ave / Neilson Way	San Vicente Blvd	Rose Ave	8:05	6:30	7:25	6:20
Main St	Colorado Ave	Rose Ave	5:10	3:20	4:10	2:55
4 th St	San Vicente Blvd	Rose Ave	9:00	7:20	8:25	7:20
Lincoln Blvd	San Vicente Blvd	Rose Ave	10:15	7:40	9:05	7:15
20 th St	Montana Ave	Ocean Park Blvd	6:15	5:10	6:05	5:15
Cloverfield Blvd / 23 rd St	Santa Monica Blvd	Rose Ave	10:45	5:30	9:20	5:20
26 th St	San Vicente Blvd	Olympic Blvd	4:20	4:45	4:15	4:45
<i>PM Peak Hour</i>						
San Vicente Blvd	Ocean Ave	26 th St	3:30	3:25	3:30	3:30
Montana Ave	Ocean Ave	Stanford Ave	4:50	4:50	4:35	4:30
Wilshire Blvd	Ocean Ave	Centinela Ave	5:55	5:40	5:25	5:15
Santa Monica Blvd	Ocean Ave	Centinela Ave	5:50	5:30	5:35	5:15
Olympic Blvd	Lincoln Blvd	Centinela Ave	4:15	4:20	4:00	4:10
I-10 / PCH	Chautauqua Blvd	Bundy Dr	6:15	6:50	6:40	6:25
Pico Blvd	Ocean Ave	Centinela Ave	5:10	4:55	5:10	4:55
Ocean Park Blvd	Neilson Way	Centinela Ave	5:15	5:15	5:20	5:20
Ocean Ave / Neilson Way	San Vicente Blvd	Rose Ave	6:55	8:30	6:30	7:50
Main St	Colorado Ave	Rose Ave	3:40	5:20	3:00	4:15
4 th St	San Vicente Blvd	Rose Ave	7:40	9:10	7:25	8:35
Lincoln Blvd	San Vicente Blvd	Rose Ave	8:05	10:15	7:30	9:00
20 th St	Montana Ave	Ocean Park Blvd	5:25	6:10	5:20	5:55
Cloverfield Blvd / 23 rd St	Santa Monica Blvd	Rose Ave	5:55	10:10	5:25	8:50
26 th St	San Vicente Blvd	Olympic Blvd	4:50	4:40	4:40	4:35

**APPENDIX D1:
APPROVAL YEAR (2020) CUMULATIVE PROJECTS**

**APPENDIX D1
LIST OF RELATED PROJECTS FOR APPROVAL YEAR (2020)***

PROJECT	ADDRESS	USE	NET NEW SIZE	UNITS	STATUS
Conversion of residential to office, retail	1305 2nd St	residential office	-48 25.292	DU KSF	Under construction Under construction
Conversion of Shore hotel conference space to restaurant	1530 2nd St	restaurant	3	KSF	Under construction
conversion of restaurant to retail	1410 3rd St	restaurant retail	-6.225 6.225	KSF KSF	Final Final
conversion of restaurant to retail	1444 3rd St	restaurant retail	-2.996 2.996	KSF KSF	Final Final
Residential	954 5th St	residential	1	DU	Final
New Courtyard by Marriot DA	1554 5th St	hotel restaurant	74.25 -17.6	KSF KSF	Final Final
New Hampton Inn and Suites DA	501 Colorado Ave	hotel retail/restaurant	76.25 -19.578	KSF KSF	Final Final
5-Unit Condos	1211 9th St	residential	5	DU	Final
Residential	1827 9th St	residential	2	DU	Final
Residential	1750 10th St	residential	7	DU	Final
8-Unit Condominium	1444 11th St	residential	2	DU	Under construction
5-Unit Condos	1518 11th St	residential	5	DU	Under construction
5-Unit Condos	1533 11th St	residential	2	DU	Under construction
Residential	1433 14th St	residential	19	DU	Final
11-Unit Condominium	1803 16th St	residential	10	DU	Final
Residential (5 condos/1 low income)	1807 17th St	residential	4	DU	Under construction
3-Unit Condos	1136 18th St	residential	1	DU	Final
Residential	1433 18th St	residential	5	DU	Final
3-Unit Condos	1927 18th St	residential	2	DU	Under construction
Medical Office addition	1419 19th St	medical office	5.3	DU	Under construction
3-Unit Condos	1927 19th St	residential creative office	0 1.8	DU KSF	Under construction Final
Auto Shop addition	1718 20th St	autobody shop	0.443	KSF	Under construction
Residential	1236 25th St	residential	1	DU	Final
8-Unit Condominium	2323 28th St	residential	6	DU	Final
2-Unit Condos	1038 Bay St	residential	1	DU	Final
500 Broadway DA (Fred Segal) Site	500 Broadway	residential affordable housing retail	249 60 22.997	DU DU KSF	Under construction Under construction Under construction
4-Unit residential	3004 Broadway	residential	4	DU	Under construction
3-Unit Condos	1329 California Ave	residential	3	DU	Under construction
Adaptive Reuse of Sears	302 Colorado Ave	retail	7.365	KSF	Under construction
Creative Office/Post Production DA	2834 Colorado Ave	creative office retail	133 9	KSF KSF	Under construction Under construction
Village Trailer Park - mixed use	2930 Colorado Ave	residential affordable housing retail creative office	324 -70 24.94 4.2	DU DU KSF KSF	Under construction Under construction Under construction Under construction
Conversion of office to grocery store/restaurant	2121 Cloverfield 2301 Pico Blvd	office retail	-53 53	KSF KSF	Final Final
1550 Euclid Mixed Use retail/office	1550 Euclid St	office restaurant	33.946 4.13	KSF KSF	Under construction Under construction
6-Unit Condos	3214 Highland	residential	-2	DU	Final
Mixed Use DA (Denny's site)	1560 Lincoln Blvd	residential affordable housing retail/restaurant	80 20 9.402	DU DU KSF	Under construction Under construction Under construction
Mixed Use DA (Norm's site)	1601 Lincoln Blvd	residential affordable housing retail/restaurant	72 18 6.448	DU DU KSF	Under construction Under construction Under construction
Mixed Use DRP (Wertz Bros & Joanns Fabric site)	1613-1637 Lincoln Blvd	residential affordable housing retail	184 9 -8.784	DU DU KSF	Under construction Under construction Under construction
1626 Lincoln Boulevard Affordable Housing	1626 Lincoln Blvd	affordable housing autobody shop	64 -8.9	DU KSF	Under construction Under construction
Mixed Use DRP (Aarons brothers)	1641-1645 Lincoln Blvd	residential affordable housing retail	68 10 -0.11	DU DU KSF	Under construction Under construction Under construction

**APPENDIX D1
LIST OF RELATED PROJECTS FOR APPROVAL YEAR (2020)***

Conversion of medical office to restaurant	1670 Lincoln Blvd	medical office restaurant	-5.352 KSF 5.352 KSF		Final Final
2919 Lincoln/802 Ashland	2919 Lincoln Blvd	residential	10 DU		Under construction
City Services Building	1685 Main St	government office	45 KSF		Under construction
3-Unit Condos	723 Pier Ave	residential	1 DU		Under construction
Residential	1112-1122 Pico Blvd	residential affordable housing	28 DU 4 DU		Under construction Under construction
Office	3205 Pico Blvd	office	4.81 KSF		Under construction
conversion of office to medical office/café	1919 Santa Monica Blvd	office medical office restaurant	-25.2 KSF 24.2 KSF 1 KSF		Final Final Final
Mixed Use	3008 Santa Monica Blvd	residential affordable housing retail	22 DU 4 DU -0.504 KSF		Under construction Under construction Under construction
Mixed Use DA (Mini)	1402 Santa Monica Blvd	auto dealership	33.75 KSF		Final
Santa Monica College AET Campus Expansion (SMC jurisdiction)	1660 Stewart St	School creative office	20 KSF 28 KSF		Final Final
conversion of retail to restaurant	214 Wilshire Blvd	retail restaurant	-7.986 KSF 7.986 KSF		Final Final
conversion of retail to restaurant	331 Wilshire Blvd	retail restaurant	-2.453 KSF 2.453 KSF		Final Final
Mixed-Use Hotel (adaptive reuse of historic building)	710 Wilshire Blvd	hotel office retail restaurant	150.148 KSF -31.138 KSF -11.793 KSF 9.11 KSF		Under construction Under construction Under construction Under construction
Mixed-Use Condos/Commercial	2300 Wilshire Blvd	residential retail restaurant	30 DU 22.3 KSF 2.7 KSF		Under construction Under construction Under construction
City of LA	1414 MAIN ST	Residential, Retail	26 DU		Under construction
City of LA	811 OCEAN FRONT WALK	Residential, Reataurant	2.7 KSF		Under construction
City of LA	12431 ROCHESTER AVE	Residential	50 DU		Under construction
City of LA	1035 SWARTHMORE AVE	Retail	58.3 KSF		Final
City of LA	1449 WELLESLEY AVE	Hotel	88 ROOMS		Under construction

**APPENDIX D2:
FUTURE YEAR (2025) CUMULATIVE PROJECTS**

**APPENDIX D2
LIST OF RELATED PROJECTS FOR FUTURE YEAR (2025)**

Assumes inclusion of all Approval Year (2020) projects in table D1

PROJECT	ADDRESS	USE	NET NEW SIZE	UNITS	STATUS
Commercial addition	1201 3rd St	retail	3.154	KSF	Approved
Commercial addition	1437 3rd St	retail	6	KSF	Approved
SM Post Office Adaptive Reuse	1248 5th St	creative office	46.82	KSF	Approved
Mixed Use DA	1415-1423 5th St	residential	50	DU	Approved
		affordable housing	14	DU	Approved
		retail	-5.304	KSF	Approved
100% affordable housing	1437 5th St	affordable housing	43	DU	Approved
		retail/restaurant	-6.499	KSF	Approved
3-Unit Condos	2102 5th St	residential	1	DU	Approved
2-Unit Condo	2215 5th St	residential	1	DU	Approved
Mixed Use DA	1313-1325 6th St	residential	56	DU	Approved
		affordable housing	5	DU	Approved
		retail	4.86	KSF	Approved
3-Unit Condos	2512 7th St	residential	3	DU	Approved
15-Unit Condominium (Turtle Villas)	1211 12th St	residential	13	DU	Approved
5-Unit Condos	1244 14th St	residential	4	DU	Approved
6-Unit Condos	1434 14th St	residential	5	DU	Approved
3-Unit Condos	817 16th St	residential	1	DU	Approved
100% Affordable Housing	1820-1826 14th St	residential	39	DU	Approved
		office	-5.3	KSF	Approved
5-Unit Condos	1949 17th St	residential	5	DU	Approved
5-Unit Condos	1840 17th St	residential	4	DU	Approved
Condos	1443 18th St	residential	10	DU	Approved
3-Unit Condos	1420 20th St	residential	-2	DU	Approved
3-Unit Condos	1422 20th St	residential	-2	DU	Approved
3-Unit Condos	1900 20th St	residential	3	DU	Approved
3-Unit Condos	1035 21st St	residential	2	DU	Approved
3-Unit Condos	1121 22nd St	residential	2	DU	Approved
2-Unit Condo	1216 Arizona Ave	residential	1	DU	Approved
3-Unit Condos	212 Bay St	residential	3	DU	Approved
3-Unit Condos	1014 Bay St	residential	2	DU	Approved
100% affordable housing	1342 Berkeley	affordable housing	8	DU	Approved
Mixed Use	2225 Broadway	residential	13	DU	Approved
	1452 23rd St	retail/restaurant	2.751	KSF	Approved
		office	-1.7	KSF	Approved
3-Unit Condos	1649 Centinela Ave	residential	2	DU	Approved
Creative office addition	2041 Colorado Ave	creative office	15	KSF	Approved
Mixed Use	1450 Cloverfield	residential	31	DU	Approved
		affordable housing	3	DU	Approved
		retail	7.384	KSF	Approved
Mixed Use	1707 Cloverfield	residential	58	DU	Approved
		affordable housing	5	DU	Approved
		retail	74.665	KSF	Approved
Mixed Use DA	1318 Lincoln Blvd	residential	39	DU	Approved
		affordable housing	4	DU	Approved
		retail	3.437	KSF	Approved
Mixed Use DA	1430-1444 Lincoln Blvd	residential	92	DU	Approved
		affordable housing	8	DU	Approved
		retail	5.878	KSF	Approved

**APPENDIX D2
LIST OF RELATED PROJECTS FOR FUTURE YEAR (2025)**

Assumes inclusion of all Approval Year (2020) projects in table D1

Mixed Use (Upscale furniture building)	1437-1443 Lincoln Blvd	residential	23	DU	Approved
		affordable housing	6	DU	Approved
		retail	-8.5	KSF	Approved
Commercial Building addition	1447 Lincoln Blvd	retail	4	KSF	Approved
		residential	1	DU	Approved
Mixed-Use DRP	1650-1660 Lincoln Blvd	residential	90	DU	Approved
		affordable housing	8	DU	Approved
		retail	-14.808	KSF	Approved
2903-2931 Lincoln Boulevard Mixed Use	2903 Lincoln Blvd	residential	43	DU	Approved
		affordable housing	4	DU	Approved
		retail	14.475	KSF	Approved
423 Ocean Avenue Adaptive Reuse	423 Ocean Ave	residential	4	DU	Approved
1828 Ocean Avenue	1828 Ocean Ave	residential	83	DU	Approved
conversion of retail to restaurant	1736 Ocean Front Walk	retail	-1.792	KSF	Approved
		restaurant	2.044	KSF	Approved
1921 Ocean Front Walk	1921 Ocean Front Walk	residential	23	DU	Approved
		retail	1.97	KSF	Approved
Mixed Use DA (bowling alley)	234 Pico Blvd	residential	97	DU	Approved
		affordable housing	8	DU	Approved
		retail	-13.041	KSF	Approved
Office	2929 Pico Blvd	office	12.066	KSF	Approved
		retail	6.284	KSF	Approved
		auto service	-1.224	KSF	Approved
2-Unit Condo	1514 Princeton	residential	2	DU	Approved
Auto Dealership	1802 Santa Monica Blvd	residential	-18	DU	Approved
		retail	1.39	KSF	Approved
		auto dealership	15.1	KSF	Approved
Mixed Use	2822 Santa Monica Blvd	residential	46	DU	Approved
		affordable housing	4	DU	Approved
		retail	-3.405	KSF	Approved
Mixed Use Apartment (addressed as 1349/1347 Yale St)	2901 Santa Monica Blvd	residential	49	DU	Approved
		affordable housing	3	DU	Approved
		retail	1.3	KSF	Approved
Mixed Use	1618 Stanford	residential	43	DU	Approved
		affordable housing	4	DU	Approved
		office	-11.055	KSF	Approved
		retail/restaurant	15.987	KSF	Approved
3-Unit Condos	122 Strand St	residential	-1	DU	Approved
Mixed Use DRP	601-611 Wilshire Blvd	residential	37	DU	Approved
		affordable housing	3	DU	Approved
		retail	-1.779	KSF	Approved
Retail	2919 Wilshire Blvd	retail	9.799	KSF	Approved
3-Unit Condos	2219 Virginia Ave	residential	2	DU	Approved
Airport Park Expansion	3201 Airport Avenue	park	12	acre	Approved
<i>Cadillac Mixed Use Development (City of Los Angeles)</i>	<i>12101 West Olympic Blvd</i>	<i>residential</i>	<i>516</i>	<i>DU</i>	<i>Approved</i>
		<i>creative office</i>	<i>200</i>	<i>KSF</i>	<i>Approved</i>
		<i>retail</i>	<i>67</i>	<i>KSF</i>	<i>Approved</i>
<i>Residential, Restaurant (City of Los Angeles)</i>	<i>825 HAMPTON DR</i>	<i>Residential, Restaurant</i>	<i>6.5</i>	<i>KSF</i>	<i>Approved</i>
<i>Supportive Housing (City of Los Angeles)</i>	<i>100 SUNSET AVE</i>	<i>Supportive Housing</i>	<i>154</i>	<i>BEDS</i>	<i>Approved</i>

**APPENDIX D2
LIST OF RELATED PROJECTS FOR FUTURE YEAR (2025)**

Assumes inclusion of all Approval Year (2020) projects in table D1

4th/Arizona - Plaza at Santa Monica Project	1301 4th St	affordable housing	48 DU	Pending
		office	209 KSF	Pending
		retail	21.03 KSF	Pending
		hotel	117 KSF	Pending
		museum	12 KSF	Pending
Mixed Use	1235 5th St	residential	18 DU	Pending
		affordable housing	5 DU	Pending
		retail	1.873 KSF	Pending
SRO Project with Commercial	1323 5th St	residential	32 DU	Pending
		affordable housing	2 DU	Pending
		retail	3.341 KSF	Pending
SRO Project with Commercial	1338-1342 5th St	residential	69 DU	Pending
		affordable housing	0 DU	Pending
		retail	7.025 KSF	Pending
Mixed Use	1425-1427 5th St	residential	92 DU	Pending
		affordable housing	0 DU	Pending
		retail	1.144 KSF	Pending
100% SRO Mixed Use with commercial	1437 6th St	residential retail/restaurant	40 DU 1.6 KSF	Pending Pending
100% Affordable Housing with commercial	1238 7th St	affordable housing	37 DU	Pending
		retail	1.444 KSF	Pending
		office	-1.976 KSF	Pending
Mixed Use	1437 7th St	residential	65 DU	Pending
		affordable housing	0 DU	Pending
		retail	-14.86 KSF	Pending
Mixed Use	1543-1547 7th St	residential	100 DU	Pending
		affordable housing	0 DU	Pending
		retail	-11 KSF	Pending
100% Affordable Housing with commercial	1514 7th St	affordable housing	50 DU	Pending
		retail	1 KSF	Pending
SRO Project with Commercial	1557 7th St	residential	32 DU	Pending
		retail	KSF	Pending
Mixed Use	711 Colorado Ave	affordable housing	56 DU	Pending
		retail	2.8 KSF	Pending
		office	-3.9 KSF	Pending
100% Affordable senior housing	1445-1453 10th St	affordable housing	37 DU	Pending
1242 20th St Wellness Center	1242 20th St 1925 Arizona Ave	R&D	65 KSF	Pending
		medical office	16.5 KSF	Pending
		ancillary meeting	14 KSF	Pending
21-Unit Condominium/2020 Virginia	2002 21st St	residential	2 DU	Pending
		affordable housing	2 DU	Pending
3-Unit Condos	1665 Appian Way	residential	-1 DU	Pending
Mixed Use DA (63 hotel rooms)	603 Arizona Ave	hotel	27.5 KSF	Pending
		restaurant	-3.64 KSF	Pending
Mixed Use (Performance Bicycles)	501 Broadway	residential	94 DU	Pending
		affordable housing	0 DU	Pending
		retail	-3.58 KSF	Pending

**APPENDIX D2
LIST OF RELATED PROJECTS FOR FUTURE YEAR (2025)**

Assumes inclusion of all Approval Year (2020) projects in table D1

Wyndam Hotel (211 rooms)	120 Colorado Ave	residential hotel affordable housing meeting space retail/restaurant	25 104190.65 3 5.47 17.244	DU KSF DU KSF KSF	Pending Pending Pending Pending
Mixed Use	525 Colorado Ave	residential affordable housing retail	32 8 1.919	DU DU KSF	Pending Pending Pending
Mixed Use	1431 Colorado Ave	residential affordable housing retail	42 8 -6.556	DU DU KSF	Pending Pending Pending
Mixed Use (Fritto misto)	601-609 Colorado Ave	residential affordable housing retail	140 0 5	DU DU KSF	Pending Pending Pending
Affordable Housing	711 Colorado Ave	residential retail	56 2	DU KSF	Pending Pending
Creative office	1645 Euclid St	creative office	23	KSF	Pending
Mixed Use	1427 Lincoln Blvd	residential retail	15 -3.746	DU KSF	Pending Pending
100% Affordable Housing	2120 Lincoln Blvd	affordable housing retail gas station	37 0.5 0.5	DU KSF KSF	Pending Pending Pending
Commercial building	3280 Lincoln Blvd	retail	4 0	KSF	Pending Pending
Retail	2740-2750 Main St	retail	4.8	KSF	Pending
Mixed Use DRP	3030 Nebraska Ave	residential affordable housing creative office	164 13 66.1	DU DU KSF	Pending Pending Pending
Miramar Hotel Revitalization Plan DA	1133 Ocean Ave 1127/1129 2nd St	residential affordable housing hotel retail/spa restaurant meeting space	120 40 35.056 16.69 8.704 -7.125	DU DU KSF KSF KSF KSF	Pending Pending Pending Pending Pending Pending
3-Unit Condos	436 Pier Ave	residential	2	DU	Pending
St Johns Campus Master Plan Phase II	2121 Santa Monica Blvd	hospital and health care medical research health wellness center education/conference center child & family development center health related services day care restaurants neighborhood commercial visitor housing multifamily replacement housing	339 59 41 55 25.5 17 9 10 5 40 10	KSF KSF KSF KSF KSF KSF KSF KSF KSF DU DU	Pending Pending Pending Pending Pending Pending Pending Pending Pending Pending Pending
Mixed Use	2906-2918 Santa Monica Blvd	residential affordable housing restaurant	40 4 11.002	DU DU KSF	Pending Pending Pending
SRO Project with Commercial	2729 Wilshire Blvd	residential retail	9 -2.4	DU KSF	Pending Pending
Mixed Use	3223 Wilshire Blvd	residential affordable housing retail/restaurant	49 4 -6.169	DU DU KSF	Pending Pending Pending