

Local Transportation Analysis

Santa Cruz Downtown Expansion Plan Santa Cruz, California

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Prepared for:

City of Santa Cruz

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EXECUTIVE SUMMARY

This report documents the results of a local transportation analysis completed for the Downtown Expansion Plan (the “proposed Project” or “the Project”) in Santa Cruz, California. The analysis is not a part of the California Environmental Quality Act (CEQA) analysis, but instead solely for evaluating the standards derived from the General Plan in the *City’s Transportation Study Requirements for Redevelopment*. While those standards investigate intersection operations (i.e. Level-of-Service), they cannot be considered and environmental impact under CEQA. Instead, the transportation portion of CEQA is prepared using a Vehicle Miles Traveled analysis and presented in that document where it finds the project to have a less than significant transportation impact.

The Project creates a plan to expand the current Downtown Plan boundary south of Laurel Street. The project area is primarily bound by Laurel Street, Laurel Street Extension, Front Street and Pacific Avenue, with a few parcels on Center Street. The project increases the development potential in the plan area to allow for redevelopment of 29 acres in with the following land uses:

- 1,800 Multifamily Housing Dwelling Units
- 30,000 SQFT of Retail
- 30,000 SQFT of Restaurant Space
- Redevelop Kaiser Permanente Arena from 3,700 up to 4,000 seats for games and events.

The Based on the *City’s Transportation Study Requirements*, five traffic volume scenarios were developed to evaluate the project based on traffic volumes collected in 2023, current known developments, and 2030 cumulative volumes from the study guidelines. The full redevelopment of the project will likely occur after 2030, but the prepared volume set was found to represent the anticipated traffic volumes beyond the year 2030 for a citywide network. The 2023 analysis with known development projects was completed to understand the affect of the project if it were all to redevelop today with known adjacent developments, representing a scenario with the greatest, near-term affects on operations.

Operational analysis was performed in in a manner consistent with the City of Santa Cruz’s *Transportation Study Requirements for Redevelopment* under the following scenarios:

- Existing (2023) Conditions
- Existing (2023) Plus Approved development Projects Conditions
- Existing (2023) Plus Approved development Projects Plus proposed Project Conditions
- Cumulative (2030) Conditions
- Cumulative (2030) Plus Project Conditions

The operational analysis was performed at 8 intersections in the 2023 conditions for morning and afternoon peak hours and 34 intersections in the 2030 conditions for the afternoon peak hour. Typical weekday peak hours were chosen because they represent the majority (70%) of peak travel conditions on the city roadways. The peak hour of summer Saturday traffic was not analyzed because those dates are not representative of typical travel patterns consistent with the proposed project.

Findings of this study include:

- The proposed Project is estimated to generate 6,307 new daily trips with 544 new trips occurring during the AM peak-hour and 442 new trips occurring during the PM peak hour compared to existing conditions.

- City of Santa Cruz General Plan currently allows 1,116 multi-family housing unit units in the project area, and were already accounted for in the 2030 cumulative volumes. The projects adds a total of 684 proposed multi-family housing units, and 60,000s.f of commercial uses that were not previously included in the City of Santa Cruz General Plan.
- The proposed Project is estimated to generate 2,357 new daily trips with 246 new trips occurring during the AM peak-hour and 119 new trips occurring during the PM peak-hour during the Cumulative Conditions.

The project exceeds the City's level of service standards of deficiency, causing the level of service to go from acceptable to substandard with the addition of the Project trips and where the Project constitutes at least 3% of the existing volume, in the following instance:

- Existing Plus Approved Projects Plus Project Conditions:
 - o Intersection #6 – Front Street and Laurel Street
 - PM Peak Hour: Project causes delay to increase from 41.8 seconds (LOS D) to 65.2 seconds (LOS E) and constitutes more than 3% of the existing total volume
 - Improvement: City to revise signal timing

For Cumulative Conditions the project does not cause any intersection to deteriorate below level-of-service D. Although the project is not required to improve the identified intersections, potential improvements were identified for informational purposes. The LOS deficiencies can be grouped into the following categories:

1. Intersection included in TIF and TIF-identified improvement applied
2. Intersection included in TIF but no TIF-identified improvement
3. Intersection not included in TIF

The following study intersection was determined to operate at an unacceptable level of service, are included in the TIF and have an applicable TIF improvement:

- Intersection #13: Ocean Street & Water Street
 - o Revised geometry:
 - Eastbound: 2 EBL, 2 EBT, & 1 EBR
 - Westbound: 1 WBL, 2 WBT, 1 WBR
 - Northbound: 1 NBL, 2 NBT, 1 NBR
 - Southbound: 2 SBL, 2 SBT, 1 SBR
 - o The intersection is anticipated to remain at LOS F with the TIF improvements implemented consistent with the TIF findings.

The following study intersections were determined to operate at an unacceptable level of service, are included in the TIF but do not have a TIF improvement:

- Intersection #6: Front Street & Laurel Street
 - o Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies.
 - o The City may consider the following improvements in a future TIF update:
 - Revise signal to include a northbound right turn overlap phase. The adjacent parcel on the southeast corner of the intersection shall dedicate right of way to accommodate a northbound Class II bike lane.

- Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
- Intersection #18: Chestnut Street & Laurel Street
 - o Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies.
 - o The City may consider the following improvements in a future TIF update:
 - Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
- Intersection #23: Ocean Street and Soquel Avenue
 - o If left turns from Ocean St are prohibited at Intersection #21 (Ocean Street and Broadway), southbound left turns would need to redirect to perform a southbound turn at Intersection #23 deteriorating intersection operations. It is unclear if the effects of that improvement were reviewed in the TIF.
 - o The City may consider the following improvements in a future TIF update:
 - Revise signal to include a northbound, southbound, and westbound right turn overlap phase. This improvement does not bring intersection operations to LOS D, but reduces delay. If the parcels adjacent to the right turn lanes redevelop, each shall dedicate right of way to accommodate Class II bike lanes.

The following study intersections were determined to operate at an unacceptable level of service but are not included in the TIF:

- Intersection #33: Pacific Avenue and Second Street
 - o The City may consider adding the intersection and the following improvements in a future TIF update:
 - Convert access to left-in and right-in/right-out. Any vehicles that need to perform a left turn out from Second Street would need to perform a U-turn at the W. Cliff Dr/Center St & Pacific Ave roundabout or perform a westbound left at the Pacific Street & Front Street (S) intersection.
 - An alternative improvement is to install a roundabout or a signal. The peak hour signal warrant is met at this intersection; however, a signal may be too close in proximity to the existing roundabouts and may interrupt flows. A full signal warrant should be reviewed during the Cumulative Conditions year (2030) to determine if a signal is warranted at this intersection.

The study evaluated impacts from queueing in the 2030 conditions and found that the Laurel Street corridor experiences additional intersection blockages due to the increases in development. While the impacts are not new, improvements in signal coordination, and turn restrictions at Laurel Street and Pacific Avenue could be considered to improve conditions along the corridor.

Laurel Street Extension, the roadway that travels between Front Street and 3rd Avenue was evaluated for additional access control measures to provide a “back door” entrance to the Beach Hill neighborhood during congested summer traffic. The analysis above show that the proposed roadway will have sufficient queuing capacity to accommodate an access control feature that limits southbound traffic on the roadway. Additionally, that feature was shown to slightly improve intersection operations at nearby intersections

A parking analysis was conducted for informational purposes, despite the project generally being exempt from parking supply regulations under state law. Based on the anticipated development, there are expected

to approximately of 1,020 off-street parking spaces provided by developers with 225 on-street spaces within the project area. The analysis evaluated two development scenarios: 1,060 and 1,800 dwelling units, both incorporating approximately 60,000 square feet of commercial space and the improved arena. For up to 1,060 dwelling units, existing on-street parking, developer-provided off-street parking, and city parking garages are expected to meet the increased demand, including during arena events. At this level, Downtown parking garages are projected to reach 92% capacity. As the development increases above 1,300 units the parking supply may not accommodate the demand with the conservative assumptions used. The project is anticipated to implement travel demand management techniques that will reduce the amount of parking demand in the project area.

The Downtown Expansion Plan in Santa Cruz, California, represents a significant opportunity to enhance the city's urban landscape by introducing multifamily housing, retail, restaurant spaces, and improvements to the Warriors' Arena. The transportation analysis shows that the additional development does not by itself create transportation deficiencies for vehicle operations at the full development that cannot be mitigated. It does further congestion at intersections in the city that are currently known to need improvements. The parking supply downtown is shown to be sufficient for the low-end of anticipated residential development which provides the city time to evaluate if transportation demand management solutions will be sufficient to mitigate anticipated demand before considering the need for additional parking supply. Many of those strategies are already being implemented by the plan, including improved multimodal transportation facilities. The project can support Santa Cruz's vision for a vibrant and sustainable downtown area while remaining consistent with the City's Transportation Study Guidelines.

TABLE OF CONTENTS

INTRODUCTION.....	9
PROJECT DESCRIPTION	9
PROJECT AREA ROADWAYS	13
TRANSPORTATION STUDY METHODOLOGY	15
Analysis Scenarios.....	15
General Plan Volume Review.....	15
Traffic Counts.....	18
Peak Hours Selected.....	18
PROPOSED PROJECT	20
Existing Trip Generation.....	20
Proposed Project Trip Generation - 2023 Conditions.....	20
Proposed Project Trip Generation and Assignment (General Plan/Cumulative Conditions)	21
Proposed Project Roadway Improvements	22
CAPACITY ANALYSIS METHODOLOGY	30
Level of Service Definitions.....	30
Intersection Analysis	30
Roundabout Analysis	30
Caltrans Facilities	30
EXISTING (2023) CONDITIONS	31
EXISTING (2023) PLUS APPROVED PROJECTS CONDITIONS	36
EXISTING (2023) PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS	40
CUMULATIVE (2030) CONDITIONS.....	43
CUMULATIVE (2030) PLUS PROJECT CONDITIONS.....	49
DEFICIENCIES AND IMPROVEMENTS	54
Standards of Deficiency	54
Summary of Deficiencies and Improvements.....	54
VEHICLE MILES TRAVELED (VMT)	58
OTHER CONSIDERATIONS.....	58
Intersection Queuing Evaluation	58
Laurel Street Extension Access Control	64
Parking Evaluation	70
Travel Demand Management	72
CONCLUSIONS	74

APPENDICES

Appendix A *Traffic Count Data Sheets*

Appendix B *Analysis Worksheets for Existing (2023) Conditions*

Appendix C *Analysis Worksheets for Existing (2023) Plus Approved Projects Conditions*

Appendix D *Analysis Worksheets for Existing (2023) Plus Approved Projects Plus Project Conditions*

Appendix E *Cumulative Buildout Volumes*

Appendix F *Analysis Worksheets for Cumulative (2030) Conditions*

Appendix G *Analysis Worksheets for Cumulative (2030) Conditions Queueing Report*

Appendix H *Analysis Worksheets for Cumulative (2030) Plus Project Conditions*

Appendix I *Analysis Worksheets for Existing (2023) Plus Approved Projects Plus Project Improvement Conditions*

Appendix J *Analysis Worksheets for Cumulative (2030) Plus Project Improvement Conditions*

Appendix K *Analysis Worksheets for Cumulative (2030) Plus Project Conditions Queueing Report*

Appendix L *General Plan Volume Growth Assessment*

Appendix M *Laurel Access Control Intersection Level of Service*

Appendix N *Parking Evaluation*

LIST OF TABLES

Table 1 – USDOT Trip Analysis.....	17
Table 2 – Weekend Volume Comparison	19
Table 3 -- Proposed Arena Events.....	22
Table 4 – Existing Trip Generation	23
Table 5 – Existing (2023) Plus Approved Projects Conditions Project Trip Generation	24
Table 6 – Cumulative Conditions Project Trip Generation	27
Table 7 – Intersection Level of Service Criteria.....	30
Table 8 – Existing (2023) Intersection Levels of Service	32
Table 9 – Existing (2023) Plus Approved Projects Intersection Levels of Service.....	38
Table 10 – Existing (2023) Plus Approved Projects Plus Proposed Project Intersection Levels of Service ...	41
Table 11 – Cumulative (2030) Conditions Intersection Levels of Service.....	45
Table 12 – Cumulative (2030) Plus Project Intersection Levels of Service	50
Table 13 – Existing (2023) Plus Approved Projects Plus Project Intersection Levels of Service	54
Table 14 – Cumulative (2030) plus Proposed Project plus Potential Improvements Intersection Levels of Service	57
Table 15 – Intersection Queuing Evaluation Results	59
Table 16 – Existing (2023) Plus Approved Projects Plus Proposed Project Plus Laurel Access Control Intersection Levels of Service.....	67
Table 17 – Cumulative (2030) Plus Project Plus Laurel Access Control Intersection Levels of Service.....	68
Table 18 -- Parking Analysis Summary.....	72

LIST OF FIGURES

Figure 1 – Project Site Vicinity Map	11
Figure 2 – Study Intersection Map.....	12
Figure 3 – Project Trip Distribution.....	25
Figure 4 – Existing (2023) Plus Approved Projects Conditions Net Project Trip Assignment	26
Figure 5 – Cumulative Conditions Net Project Trip Assignment	28
Figure 6 – Existing (2023) AM and PM Peak-Hour Traffic Volume.....	34
Figure 7 – Existing (2023) Plus Approved Projects AM and PM Peak-Hour Traffic Volume	39
Figure 8 – Existing (2023) Plus Approved Projects Plus Project AM and PM Peak-Hour Traffic Volumes	42
Figure 9 – Cumulative (2030) AM and PM Peak-Hour Traffic Volumes.....	47
Figure 10 – Cumulative (2030) Plus Project AM and PM Peak-Hour Traffic Volumes	52

INTRODUCTION

This report documents the results of a transportation study completed for the Santa Cruz Downtown Expansion Plan Project (the “proposed Project”, or “Project”). The Project proposes to redevelop 12 acres in Downtown Santa Cruz, California, with the following land uses:

- 1,800 Multifamily Housing Dwelling Units
- 30,000 SQFT of Retail
- 30,000 SQFT of Restaurant Space
- Redevelopment of the existing Kaiser Permanente Arena with increased capacity and events

Access to the Project is from Front Street, Pacific Avenue, and Center Street.

This study was performed in accordance with the scope of work approved by the City of Santa Cruz, and in a manner consistent with the City of Santa Cruz’s *Transportation Study Requirements for Development*. The remaining sections of this report document the proposed Project, analysis methodologies, deficiencies and improvements, and general study conclusions.

PROJECT DESCRIPTION

The Project proposes the following land uses:

- 1,800 Multifamily Housing Dwelling Units
- 30,000 SQFT of Retail
- 30,000 SQFT of Restaurant Space
- Redevelopment of the Warriors Arena with a capacity of approximately 3,200 fixed seats (e.g., for basketball games), and approximately 4,000 fixed and temporary seating for other entertainment events such as musical concerts. Ancillary uses include a secondary practice court, locker/team support facilities, food service/merchandising, and administrative support services. This would replace the existing 35,000 sf. temporary arena with 2,475 fixed seats and 3,100 fixed and temporary seating for other entertainment events. The number of annual events is estimated (by the Santa Cruz Warriors) to be:

• 2,500+ Attendees	up to 60 (30 Warriors, 30 concerts/entertainment)
• 1,000-2,499 Attendees	up to 40 (20 Symphony, 20 concerts/entertainment)
• 150-1,000 Attendees	50 (35 UC Santa Cruz sporting events, 15 other)
• <150 Attendees	25

The Project location along with the assumed driveways are shown in **Figure 1** and the study intersections are shown in **Figure 2**. The following intersections are included in this evaluation:

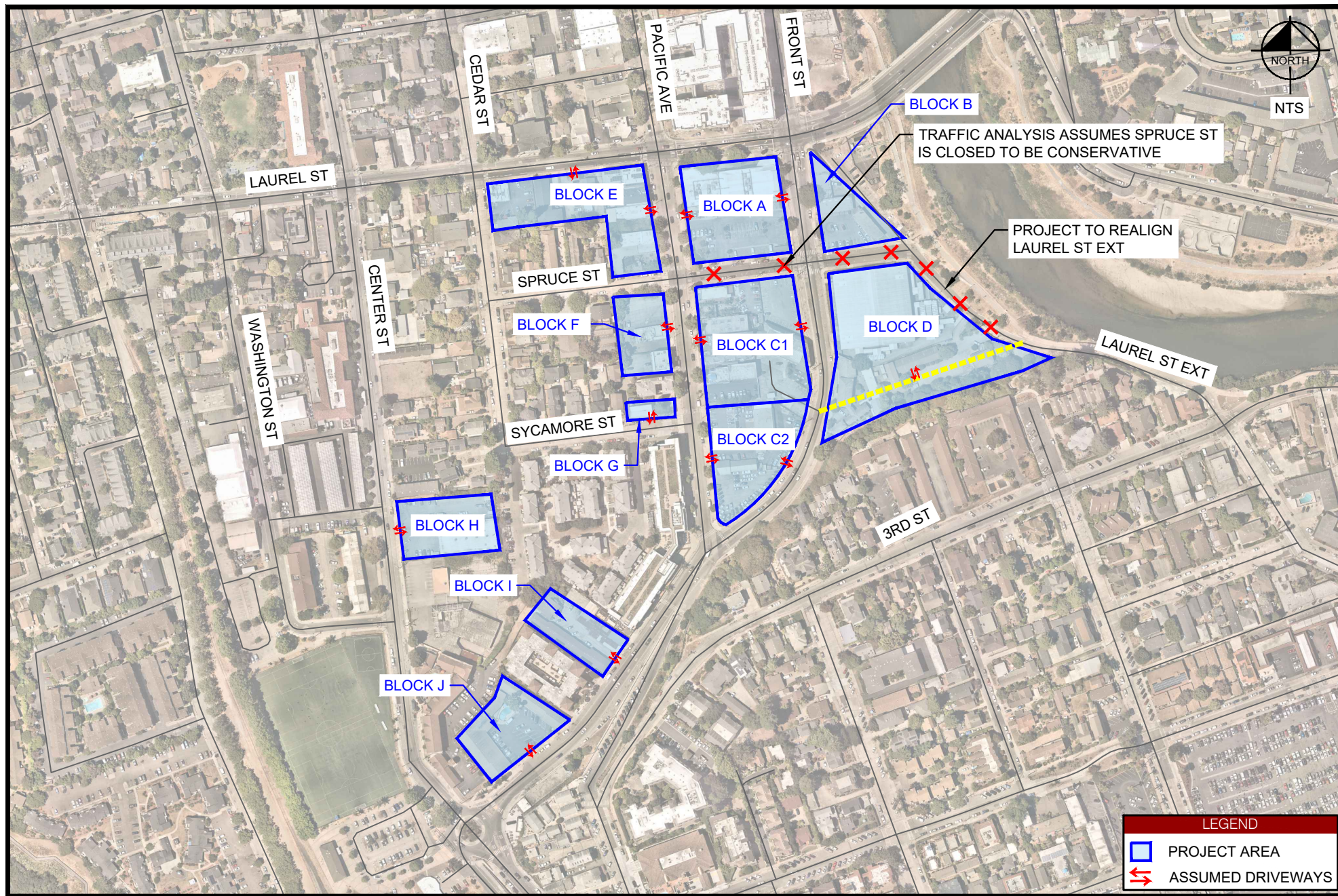
Intersections:

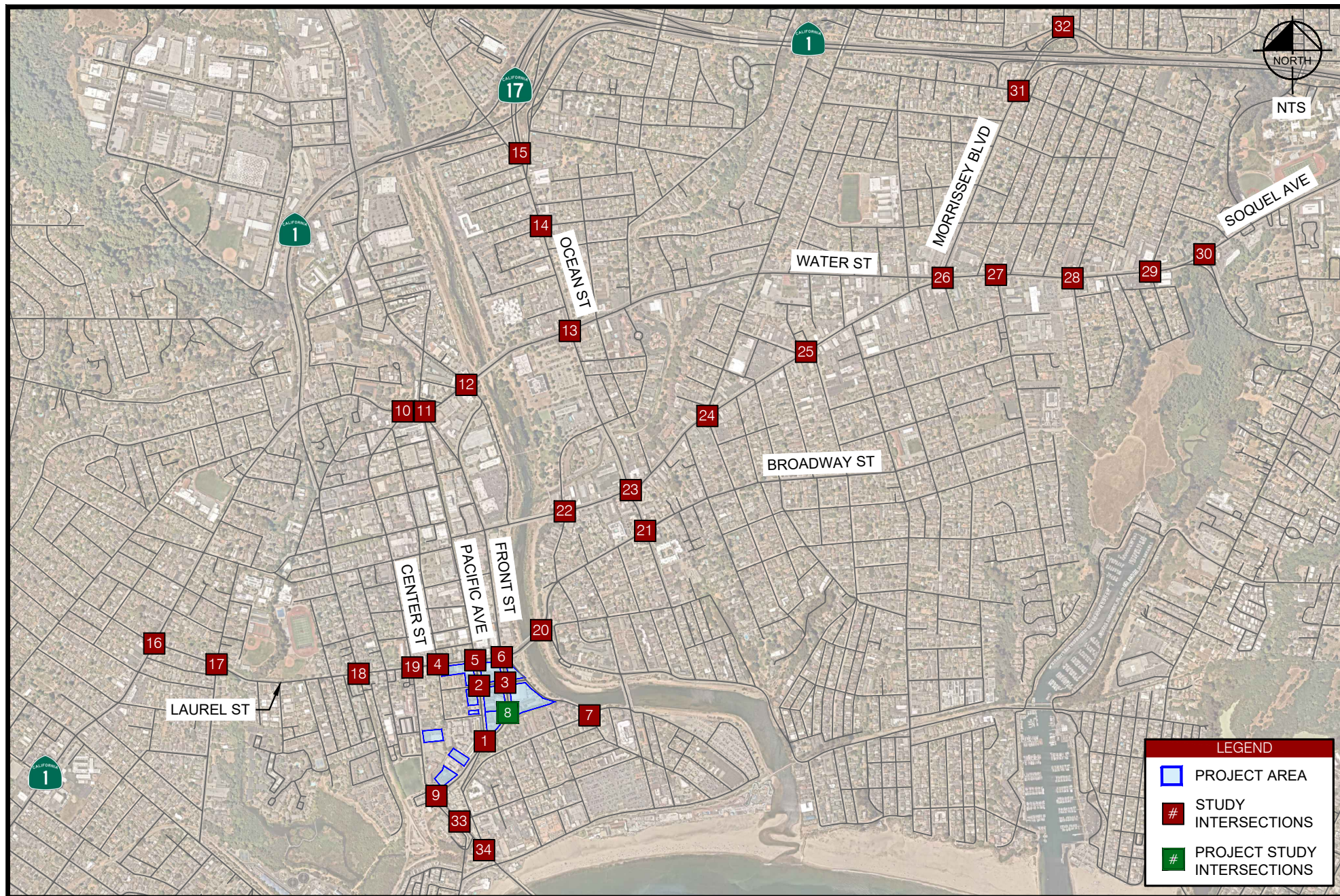
1. Pacific Avenue & Front Street (N)
2. Pacific Avenue & Spruce Street
3. Front Street & Spruce Street
4. Laurel Street & Cedar Street
5. Laurel Street & Pacific Avenue
6. Laurel Street & Front Street
7. Laurel Extension & Third Street
8. Front Street & Laurel Extension (proposed intersection)
9. W Cliff Drive/Center Street & Pacific Avenue
10. Mission Street & Center Street

11. Mission Street & Front Street/Pacific Avenue
12. Water Street & River Street
13. Water Street & Ocean Street
14. Ocean Street & Washburn Avenue
15. Ocean Street & Plymouth Street
16. Laurel Street & SR 1/Mission Street
17. Laurel Street & California Street
18. Laurel Street & Chestnut Street
19. Laurel Street & Center Street
20. Laurel Street & San Lorenzo Boulevard
21. Broadway & Ocean Street
22. Riverside Avenue & Soquel Avenue
23. Soquel Avenue & Ocean Street
24. Soquel Avenue & Branciforte Avenue
25. Soquel Avenue & Seabright Avenue
26. Soquel Avenue & Morrissey Boulevard/Water Street
27. Soquel Avenue & Frederick Street
28. Soquel Avenue & Trevethan Avenue/Hagemann Avenue
29. Soquel Avenue & Park Way
30. Soquel Avenue & Capitola Road
31. Morrissey Boulevard & Fairmount Avenue/SR-1 SB On-Ramp
32. Morrissey Boulevard & SR-1 NB Ramps/Rooney Street/Pacheco Avenue
33. Pacific Avenue & Second Street
34. Pacific Avenue & Front Street (S)

Based on the City's requirements, this transportation study was conducted for the study intersections under the following scenarios:

- Existing (2023) Conditions
- Existing (2023) Plus Approved Projects Conditions
- Existing (2023) Plus Approved Projects Plus Project Conditions
- Cumulative (2030) Conditions
- Cumulative (2030) Plus Project Conditions





PROJECT AREA ROADWAYS

The following is a description of the primary roadways in the vicinity of the Project site:

Front Street is a north-south minor arterial roadway, extending from Water Street to Pacific Avenue. The roadway predominantly has two vehicle lanes (one lane in each direction), a 25 mph speed limit, Class II bike lanes, on-street parking and sidewalks on both sides. The Santa Cruz METRO station is located within a half-mile north of the project area and serves Routes 2, 3A, 3B, 4, 4W, 11, 16, 17, 18, 19, 20, and 90X. Notably, between Water Street and River Street, Front Street is one-way southbound for vehicular traffic with a Class II bike lane southbound only. Through the project area, route 19 provides 15 minutes headways.

Cedar Street is a north-south major collector roadway extending from Center Street to Sycamore Street. The roadway has two vehicle lanes (one lane in each direction), a 25 mph speed limit, Class II bike lanes, on-street parking and sidewalks on both sides. Santa Cruz METRO Routes 40 and 41 utilize the corridor.

Pacific Avenue is a north-south major collector roadway, extending from Mission Street/Water Street to Beach Street. The roadway predominantly has two vehicle lanes (one lane in each direction), a 25 mph speed limit, sidewalks on both sides, and on-street parking. Pacific Avenue is one-way southbound between Water Street and Locust Street and one-way northbound between Cathcart Street and Church Street. Portions of the corridor through the Downtown area have a 15 mph speed limit. The bike facility types vary widely along the corridor as follows:

1. Water Street to Locust Street – no facilities
2. Locust Street to Church Street - Class III bike routes in both directions
3. Church Street to Cathcart Street – Class II bike lane southbound and Class III bike route northbound
4. Cathcart Street to Laurel Street – Class II bike lanes in both directions
5. Laurel Street to Front Street – no facilities
6. Front Street to Beach Street - Class II bike lanes in both directions

Santa Cruz METRO Routes 19 and 20 utilize the corridor from Front Street to Beach Street.

Center Street is a north-south minor arterial roadway, extending from Water Street to the roundabout at Pacific Avenue. The roadway predominantly has two vehicle lanes (one lane in each direction), a 25 mph speed limit, sidewalks on both sides and on-street parking. Class II bike lanes are present from Laurel Street to Pacific Avenue.

Laurel Street is an east-west minor arterial roadway extending from Escalona Drive to Broadway/San Lorenzo Boulevard, where it becomes Broadway. Laurel Street between Escalona Drive and Mission Street/Highway 1 is classified as a major collector. The roadway predominantly has two vehicle lanes (one lane in each direction) has a speed limit of 25 mph, sidewalks on both sides, and on-street parking. Laurel Street is a Class III bike route from Escalona Drive to California Street and has Class II bike lanes from California Street to San Lorenzo Boulevard. Santa Cruz METRO Routes 16 and 18 utilize the corridor providing 15 minute headways

Laurel Street Extension is a north-south local roadway that connects Front Street to 3rd Street, providing access between the Downtown and Beach Area neighborhoods. The roadway has two-way vehicular traffic from Front Street to the east for approximately 375 feet where it transitions into one-way southbound traffic only until 3rd Street. The first block east of Front Street has sidewalk and on-street parking on both sides of the street. For the rest of the corridor the north sidewalk connects to and becomes part of the Santa Cruz Riverwalk Class I multi-use path while the south sidewalk ends. The roadway provides access to a Levee Pump Station and a city parking lot behind Wheel Works.

Spruce Street is a two-lane east-west local roadway situated between Cedar Street and Laurel Street Extension. The roadway has a speed limit of 25 mph, sidewalks on both sides, and on-street parking.

Sycamore Street is a two-lane east-west local roadway between Cedar Street and Pacific Avenue. The roadway has a speed limit of 25 mph, sidewalks on both sides, and on-street parking.

TRANSPORTATION STUDY METHODOLOGY

This transportation study was performed in accordance with the City's transportation study guidelines¹, except for the short-term base line conditions

Analysis Scenarios

The Specific Plan area is located immediately south of the Downtown. The Downtown is currently undergoing redevelopment of several mixed-use projects, which will add cars, bikes, pedestrians, and bus traffic onto the road network. In consideration of the current and short term proposed development in Downtown, a scenario was introduced that would assess roadway capacity for the addition of the project, assuming a baseline where the short-term Downtown development is included.

Typically, the City requires Existing plus Project conditions to be analyzed. Instead, this study is using as baseline the Approved Project conditions, which represents a more accurate forecast of traffic conditions in the area on typical days. In addition, the AM peak was analyzed due to the character of travel in the project area that also peaks in the morning with residents leaving, and business attracting inbound traffic. For this scenario, intersection locations closer to the Downtown and project area was selected, reviewing trip distribution from the project and existing traffic count data and known CIP roadway projects. These intersections have short term improvements planned. Studying more intersections further away from the Specific Plan area would not yield a benefit, because the plan area will not be substantially complete in the short term (approx. 2030).

A comparison between General Plan 2010, General Plan 2030 and 2023 traffic volumes were conducted for the study to also estimate potential General Plan volumes at study intersections not currently in the General plan, but within the Specific Plan influence area. A discussion of the volumes and growth rates are contained in the Section "General Plan Volume Review" below.

General Plan Volume Review

An analysis was conducted to review traffic volumes previously developed by the City for future growth assumed in the 2030 City of Santa Cruz General Plan. This section discusses the approach in adjusting these anticipated volumes based on more recent background and pending project updates at the study intersections. Since the adoption of the 2030 General Plan in 2012, COVID has changed travel patterns, and this change plus background land use growth was utilized to revise the Cumulative conditions traffic volumes.

As shown in **Appendix L**, existing 2023 PM peak hour volumes (based on real traffic counts) have decreased relative to the same metric in 2010. The initial traffic volumes used for the Cumulative 2030 analysis were created by applying 1%-4% growth per year from 2010 to 2030 (20 years). However, as indicated in **Appendix L**, a growth in auto trips has fallen below that average between 2010 and 2023.

Further analysis was conducted to determine the accuracy of the count data collected in 2024. As shown in **Table 1** the United States Department of Transportation (USDOT) Trips by Distance database was reviewed between 2019-2023. From this data, USDOT reports the following for the County of Santa Cruz:

- A 17% decrease (approximately 199,600 trips) in average number of trips per day from 2019 to 2023.
- A 17% increase (approximately 9,820 people) in average population staying at home from 2019 to 2023.
- A 5% decrease (approximately 9,820 people) in average population not staying at home from 2019

¹ *City of Santa Cruz Transportation Study Requirements for Development*, City of Santa Cruz, 2021

to 2023.

The following defines each input analyzed from the USDOT data:

- Population staying at home:
 - o Number of residents staying at home, i.e., persons who make no trips with a trip end more than one mile away from home.
 - o Trips from this category can still exist on the network as a trip to the grocery store may be less than one mile away from home.
- Population not staying at home:
 - o Number of residents not staying at home.
- Number of trips
 - o Number of trips made by residents, i.e., movements that include a stay of longer than 10 minutes at an anonymized location away from home.

The USDOT data indicates that 2023 traffic conditions have not fully returned to 2019 conditions (pre-COVID conditions) and that trips on the network are potentially lower than pre-COVID conditions due to work from home/shorter trip characteristics. Traffic volumes for 2023 have not shown increases over 2010, and therefore, the current growth forecasted in the General Plan is appropriate to use for analysis purposes.

For the analysis provided in this report, the Cumulative 2030 PM peak hour volumes generated from the City of Santa Cruz General Plan were utilized for the analysis. Utilizing these volumes will provide a conservative analysis and is consistent with the City of Santa Cruz's current TIF program.

Table 1 – USDOT Trip Analysis

Santa Cruz County						
Year	Population Staying at Home (Average) (Number of trips per day per geographic unit/total trips per day in all geographic units)	% Change from 2019	Population Not Staying at Home (Average) (Number of trips per day per geographic unit/Number of trips per day per geographic units)	% Change from 2019	Number of Trips (Average) (Number of trips per day per geographic unit/Number of trips per day per geographic units)	% Change from 2019
2019	57,682.11	-	215,530.89	-	1,207,426.50	-
2020	82,097.63	+42%	191,115.37	-11%	670,892.81	-44%
2021	70,507.23	+22%	202,705.77	-6%	762,577.14	-37%
2022	63,706.46	+10%	209,506.54	-3%	847,330.76	-30%
2023	67,499.06	+17%	205,713.94	-5%	1,007,827.02	-17%

Notes

1. Data was recorded from the U.S. Department Transportation (USDOT) Trips by Distance Analysis:

https://data.bts.gov/Research-and-Statistics/Trips-by-Distance/w96p-f2qv/about_data

Traffic Counts

Traffic counts were collected in February, March and October 2023 at all project area intersections during the weekday morning and afternoon peak periods. Additional automated traffic recorders were used to collect weekday and weekend traffic volumes to provide a comparison between the two periods.

Peak Hours Selected

The AM peak hour in the study area used in the Approved Project conditions was determined to generally occur between 8 AM and 9 AM. The PM peak hour was determined to generally occur between 5 PM and 6 PM. In the Downtown core, volumes in the earlier afternoon may be higher, mainly due to commercial activity when compared to the citywide peak. Detailed turning movement counts are attached in the Appendix. The project analyzed weekday morning and afternoon peak hours typical of the weekday commute, consistent with the City General Plan analysis approach. Weekend and peak summer traffic was not analyzed as it does not represent typical conditions which is discussed further below.

The Saturday count data were taken the last week of October 2023 to illustrate the difference between weekday and Saturday volumes. The daily volumes were observed to be higher compared to the weekday, but the peak hour volumes were comparable, as illustrated in Table 2. At location, on Pacific Avenue between Sycamore Street and Spruce Street, the Saturday peak hour volumes are 46 vehicles higher than the PM peak, at Front Street the peak on a weekday is about the same as on a Saturday peak, with only a one vehicle decreases on a Saturday, and at Center Street between Washington Street and Laurel Street the peak hour volume on a Saturday is 143 vehicles higher than a weekday.

Weekend traffic to the project area is a concern as project area roadways can become congested with peak beach traffic. For reference, Saturdays comprise about 14% of the annual weekdays (52/365) and the summer between Memorial Day and Labor Day make out about 27% of days a year (98/364). By comparison weekdays (Monday through Friday) represent about 70% of the days in a year, the time periods selected for the analysis. The solutions to congestion during peak periods won't be found by increasing roadway capacity, instead providing additional options, like the enhanced bikeways, parking control, or access control on Laurel Street Extension, are tools to provide relief to the traffic congestion.

Regarding overlap with events at the Areana. The Arena will host most of its event on weekday evenings, and some traffic coming to an event can overlap with traffic leaving the area, and congestion would occur primarily outside of the typical City peak commute hours. On weekends the Arena events are not expected to overlap with weekend traffic as the peak hours were observed to be around 2:00PM to 4:00PM and events start at 7:00PM. Furthermore, the peak directions for those headed towards events versus those headed home from the beach will be opposite each other, further smoothing over the effect of the overlapping traffic.

Table 2 – Weekend Volume Comparison

1	Location: Pacific Ave, Between Sycamore St & Spruce St	
	Thursday 10/26/2023	Saturday 10/28/2023
Peak Hour	17:00	14:00
Peak Hour Volume	218	264
Total Volume	2513	3267

2	Location: Front St, Between Pacific Ave & Spruce St	
	Thursday 10/26/2023	Saturday 10/28/2023
Peak Hour	15:00	16:00
Peak Hour Volume	849	848
Total Volume	8937	9455

3	Location: Center St, Between Washington St & Laurel St	
	Thursday 10/26/2023	Saturday 10/28/2023
Peak Hour	17:00	16:00
Peak Hour Volume	354	497
Total Volume	4131	5622

PROPOSED PROJECT

The redevelopment will increase the number of trips to the project area as well as modify project roadways. The number of net new trips to the project area depends on the base-year chosen. The traffic analysis uses both the existing 2023 conditions and projected 2030 cumulative conditions. The following section describes how those volumes are calculated and assigned to project area roadways.

Existing Trip Generation

The number of existing trips generated by the current land uses was estimated using data included in the *ITE Trip Generation Manual, 11th Edition*. A summary of the existing trip generation for Daily, AM, and PM peak hours is presented in **Table 4**. As shown in **Table 4**, the existing land uses generate a gross total of 3,990 daily trips, 259 trips occurring during the AM peak-hour, and 412 trips occurring during the PM peak-hour. Existing trips generated by the temporary Arena are not included in these numbers because it is a special event facility and not part of daily peak hour traffic. Further discussion of the Arena's trip generation is provided below. These trips are expected to be represented in the traffic counts collected in 2023.

Proposed Project Trip Generation - 2023 Conditions

The number of trips anticipated to be generated by the proposed Project was estimated using data included in the *ITE Trip Generation Manual, 11th Edition* for each block of development. These trip generation rates represent the anticipated vehicular trips to an empty site and are then adjusted to account for local conditions.

As seen in **Table 5**, trips associated with the existing land uses were removed from the net external project trips consistent with standard City practices due to the proposed Project replacing the existing land uses. Therefore, these trips are already the road network and were included as part of the traffic counts collected.

Big Data (Replica) was used to determine that approximately 22% of daily trips utilize non-motorized modes of transportation (walking, biking, transit, and other) within Downtown Santa Cruz. Therefore, a 22% reduction, was applied to the vehicular trip generation for mode share reductions. The reduction for internal capture (trips that start and end in the downtown) and pass-by (trips already on the network), was further calculated and subtracted from the trip generation. In comparison, the Downtown Recovery Plan used a larger, 40%, reduction in automobile volumes.

The proposed Project trip generation for the weekday AM and PM peak-hours (see **Table 5**) is estimated to generate 6,307 new daily trips with 544 new trips occurring during the AM peak-hour and 442 new trips occurring during the PM peak-hour.

Trip Distribution and Assignment – 2023 Conditions

Project traffic was distributed and assigned to the roadway network using a combination of the Santa Cruz travel demand model and engineering practice. The proposed Project trip AM and PM distribution percentages are provided in **Figure 3**. The assignment of AM and PM peak-hour Project trips is depicted in **Figure 4**.

It should be noted that the project trip assignment volumes illustrated portray the proposed trip generation with both internal capture and mode share reductions applied. Trip credits for the existing land uses are not reflected in the figure because of the roadway network changes between Existing Conditions and Project Conditions. Existing trips within the Project Area were redistributed based on the proposed roadway network. Trip distribution and assignment outside of the Project Area was kept consistent, i.e. towards Mission Street, Soquel Drive, Highway 1, Highway 17, etc. Trips within the Specific Plan Area were assigned based on the proposed roadway network and land plan.

Proposed Project Trip Generation and Assignment (General Plan/Cumulative Conditions)

Trip generation was also completed for General Plan/Cumulative Conditions since the majority of the Project's housing was already included in the City's General Plan. In the Cumulative Conditions, 1,116 multi-family housing units are already allowed for under the General Plan. That means that the proposed 1,800 multi-family housing units results in 684 new multi-family housing units. The 60,000 square feet of commercial is all new and the arena is discussed below.

The trip generation methodology was repeated from the 2023 Conditions with the cumulative condition land uses. The proposed project trip generation for the weekday AM and PM peak-hours (See **Table 6**) is 246 new trips occurring during the AM peak-hour and 119 new trips occurring during the PM peak-hour. Total daily trips resulting from the proposed project estimated at 2,357 new trips generated.

Trip Distribution and Assignment – Cumulative Conditions

Project traffic was distributed and assigned to the roadway network using a combination of existing traffic conditions and engineering judgement. The proposed Project trip AM and PM distribution percentages are shown in **Figure 3**. The assignment of AM and PM peak-hour Project trips is shown in **Figure 5**.

Arena Trip Generation

Construction of a new permanent arena with a capacity of approximately 3,200 fixed seats (e.g., for basketball games), and approximately 4,000 fixed and temporary seating for other entertainment events such as musical concerts. Ancillary uses include a secondary practice court, locker/team support facilities, food service/merchandising, and administrative support services. This would replace the existing 35,000 sf. temporary arena with 2,475 fixed seats and 3,100 fixed and temporary seating for other entertainment events. The number of annual events is estimated (by the Santa Cruz Warriors) to be:

2,500+ Attendees	up to 60 (30 Warriors, 30 concerts/entertainment)
1,000-2,499 Attendees	up to 40 (20 Symphony, 20 concerts/entertainment)
150-1,000 Attendees	50 (35 UC Santa Cruz sporting events, 15 other)
<150 Attendees	25

The number of events is expected to increase from the existing uses. It is calculated that the Warriors will host approximately 28 games per year between November and April, an increase in four games. Based on historic ticket sales the current facility accommodates an average of 2,833 attendees per game. The new stadium is expected to have more attendees based on the new increased seating capacity.

The Santa Cruz Symphony is expected to host approximately seven events per annum with an average attendance of 875 patrons. Approximately 30 other events (e.g.) concerts are planned with an average attendance of 3,502 concert goers. About 40 UCSC Sporting events will be held with an average of 100 attendees. Five small events and five trade shows will be held per annum, hosting between 200 and 1,000 attendees per event respectively. Additional events will include UCSC Sports, music concerts and small gatherings of less than 150 people.

Per historical data from the existing arena provided by the Applicant, events yield an average 85% occupancy rate. The Federal Highway Administration research document, Managing Travel for Planned Special Events, indicate an average occupancy per vehicle of 2.5 persons, with a typical range of 2.2 to 2.8 persons per vehicle per event. [https://ops.fhwa.dot.gov/publications/fhwaop04010/chapter5_03.htm] .

In addition to stadium visitors, approximately 102 staff are anticipated for Santa Cruz Warrior games and also for Entertainment events (both larger events). For smaller events, approximately 25 staff will manage the activities.

Based on the event data above the average vehicular traffic that would be generated by a typical event at the Arena are calculated by multiplying tickets by vehicle occupancy and presented in Table 3 below. Note that many of these events are already occurring and the increase in trips are indicated as well. Most of the trips are anticipated to be made by private vehicle, but some trips could be made by other mode such as walking, biking or by transit:

Table 3 - Proposed Arena Events

Event	Existing Average Event Trip	New Average Event Trips	Increase in Trips per Event
Santa Cruz Warriors	1,846	2,339	493
Santa Cruz Symphony	720	720	-
Other Entertainment	2,271	2,883	612
UCSC Sporting Event	100	100	-
Trade Shows	620	820	200
Small Event	180	180	-

The trips to the events are not anticipated to overlap with peak weekday traffic which occurs between 5:00pm and 6:00pm and would be in the opposite direction of travel. The Warriors games are primarily on Fridays and Saturdays during the winter, with games starting at 7:00 PM. These trips are not included in the project trip generation as the peak hours are different.

Proposed Project Roadway Improvements

The following improvements will be implemented by the Project:

- Intersection #1: Front Street (N) & Pacific Avenue
 - o Convert the existing two-way stop to a roundabout
- Spruce Street – Between Front Street and Pacific Avenue
 - o The study anticipates a road closure to through traffic, may be open for authorized vehicles to provide a conservative analysis.
 - o If road is not closed, some traffic would be redistributed to the study intersections but the redistributed volumes would be anticipated to be small and not result in changes to LOS.
- Laurel Street Extension
 - o The existing Laurel Street Extension will be relocated south of the existing temporary Kaiser Permanente Arena

Table 4 - Existing Trip Generation

ITE Generation Factors												
Land Use (ITE Code)	# Unit(s)/ KSF	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	IN		OUT		Total Trips	IN		OUT	
				%	Trips	%	Trips		%	Trips	%	Trips
Single-Family Detached Housing (210)	- DU	-	-	26%	-	74%	-	-	63%	-	37%	-
Multifamily Housing (Low-Rise) (220)	- DU	6.74	0.40	24%	-	76%	-	0.51	63%	-	37%	-
Multifamily Housing (Mid-Rise) (221)	- DU	4.54	0.37	23%	-	77%	-	0.39	61%	-	39%	-
Motel (320)	- Rooms	3.35	0.35	37%	-	63%	-	0.36	54%	-	46%	-
Strip Retail Plaza (<40k) (822)	- KSF	54.45	2.36	60%	-	40%	-	6.59	50%	-	50%	-
High-Turnover (Sit-Down) Restaurant (932)	- KSF	107.20	9.57	55%	-	45%	-	9.05	61%	-	39%	-
Fast-Food Restaurant w/o D.T. (933)	- KSF	450.49	43.18	58%	-	42%	-	33.21	50%	-	50%	-
Automobile Care Center (942)	- KSF	31.10	2.25	66%	-	34%	-	3.11	48%	-	52%	-
Automobile Sales (Used) (841)	- KSF	27.06	2.13	76%	-	24%	-	3.75	47%	-	53%	-
Assisted Living (254)	- Beds	2.60	0.18	60%	-	40%	-	0.24	39%	-	61%	-

Existing Trip Generation														
Block A														
Strip Retail Plaza (<40k) (822)	5.97	KSF	325	14	-	8	-	6	39	-	20	-	19	
Fast-Food Restaurant w/o D.T. (933)	1.15	KSF	519	50	-	29	-	21	38	-	19	-	19	
Total Block A			844	64	-	37	-	27	77	-	39	-	38	
Block B														
Automobile Care Center (942)	3.9	KSF	120	9	-	6	-	3	12	-	6	-	6	
Total Block B			120	9	-	6	-	3	12	-	6	-	6	
Block C2														
Multifamily Housing (Low-Rise) (220)	26	DU	175	10	-	3	-	7	13	-	8	-	5	
Strip Retail Plaza (<40k) (822)	13.9	KSF	759	33	-	20	-	13	92	-	46	-	46	
Automobile Care Center (942)	3.7	KSF	114	8	-	5	-	3	11	-	5	-	6	
Automobile Sales (Used) (841)	2.8	KSF	75	6	-	5	-	1	10	-	5	-	5	
Total Block C			1,123	57	-	33	-	24	126	-	64	-	62	
Block D														
Multifamily Housing (Low-Rise) (220)	13	DU	88	5	-	1	-	4	7	-	4	-	3	
Assisted Living (254)	21	Beds	55	4	-	2	-	2	5	-	2	-	3	
Total Block D			143	9	-	3	-	6	12	-	6	-	6	
Block E														
Single-Family Detached Housing (210)	1	DU	15	1	-	0	-	1	1	-	1	-	0	
Multifamily Housing (Low-Rise) (220)	9	DU	61	4	-	1	-	3	5	-	3	-	2	
Strip Retail Plaza (<40k) (822)	7.4	KSF	403	17	-	10	-	7	49	-	25	-	24	
Total Block E			479	22	-	11	-	11	55	-	29	-	26	
Block F														
Multifamily Housing (Low-Rise) (220)	3	DU	20	1	-	0	-	1	2	-	1	-	1	
High-Turnover (Sit-Down) Restaurant (932)	2.3	KSF	242	22	-	12	-	10	20	-	12	-	8	
Total Block F			262	23	-	12	-	11	22	-	13	-	9	
Block G														
Multifamily Housing (Low-Rise) (220)	5	DU	34	2	-	0	-	2	3	-	2	-	1	
Total Block G			34	2	-	0	-	2	3	-	2	-	1	
Block H														
Automobile Care Center (942)	10.4	KSF	324	23	-	16	-	7	32	-	15	-	17	
Total Block H			324	23	-	16	-	7	32	-	15	-	17	
Block I														
Multifamily Housing (Low-Rise) (220)	10	DU	67	4	-	1	-	3	5	-	3	-	2	
Strip Retail Plaza (<40k) (822)	5.3	KSF	289	13	-	8	-	5	35	-	18	-	17	
Total Block I			356	17	-	9	-	8	40	-	21	-	19	
Block J														
Motel (320)	91	Rooms	305	33	-	12	-	21	33	-	18	-	15	
Total Block J			305	33	-	12	-	21	33	-	18	-	15	
Total Existing Trips														
Single-Family Detached Housing (210)	1	DU	15	1	-	0	-	1	1	-	1	-	0	
Multifamily Housing (Low-Rise) (220)	66	DU	445	26	-	6	-	20	35	-	21	-	14	
Multifamily Housing (Mid-Rise) (221)	0	DU	0	0	-	0	-	0	0	-	0	-	0	
Motel (320)	91	Rooms	305	33	-	12	-	21	33	-	18	-	15	
Strip Retail Plaza (<40k) (822)	32.6	KSF	1,776	77	-	46	-	31	215	-	109	-	106	
High-Turnover (Sit-Down) Restaurant (932)	2.3	KSF	242	22	-	12	-	10	20	-	12	-	8	
Fast-Food Restaurant w/o D.T. (933)	1.2	KSF	519	50	-	29	-	21	38	-	19	-	19	
Automobile Care Center (942)	18.0	KSF	558	40	-	27	-	13	55	-	26	-	29	
Automobile Sales (Used) (841)	2.8	KSF	75	6	-	5	-	1	10	-	5	-	5	
Assisted Living (254)	21	Beds	55	4	-	2	-	2	5	-	2	-	3	
Total Existing Trips			3,990	259	-	139	-	120	412	-	213	-	199	

Notes

1. Trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition (2023).

Table 5 - Existing (2023) Plus Approved Projects Conditions Project Trip Generation

ITE Generation Factors													
Land Use (ITE Code)	# Unit(s)/ KSF	Daily Trips	AM Peak-Hour						PM Peak-Hour				
			Total Trips	IN		OUT		Total Trips	IN		OUT		
				%	Trips	%	Trips		%	Trips	%	Trips	
Single-Family Detached Housing (210)	- DU	-	-	26%	-	74%	-	-	63%	-	37%	-	
Multifamily Housing (Low-Rise) (220)	- DU	6.74	0.40	24%	-	76%	-	0.51	63%	-	37%	-	
Multifamily Housing (Mid-Rise) (221)	- DU	4.54	0.37	23%	-	77%	-	0.39	61%	-	39%	-	
Motel (320)	- Rooms	3.35	0.35	37%	-	63%	-	0.36	54%	-	46%	-	
Strip Retail Plaza (<40k) (822)	- KSF	54.45	2.36	60%	-	40%	-	6.59	50%	-	50%	-	
High-Turnover (Sit-Down) Restaurant (932)	- KSF	107.20	9.57	55%	-	45%	-	9.05	61%	-	39%	-	
Fast-Food Restaurant w/o D.T. (933)	- KSF	450.49	43.18	58%	-	42%	-	33.21	50%	-	50%	-	
Automobile Care Center (942)	- KSF	31.10	2.25	66%	-	34%	-	3.11	48%	-	52%	-	
Automobile Sales (Used) (841)	- KSF	27.06	2.13	76%	-	24%	-	3.75	47%	-	53%	-	
Assisted Living (254)	- Beds	2.60	0.18	60%	-	40%	-	0.24	39%	-	61%	-	

Project Trip Generation													
Block A													
Multifamily Housing (Mid-Rise) (221)	318 DU	1,444	118	-	27	-	91	124	-	76	-	48	
Strip Retail Plaza (<40k) (822)	4.0 KSF	218	9	-	5	-	4	26	-	13	-	13	
High-Turnover (Sit-Down) Restaurant (932)	4.0 KSF	429	38	-	21	-	17	36	-	22	-	14	
Total Block A			2,091	165	-	53	-	112	186	-	111	-	75
Block B													
Multifamily Housing (Mid-Rise) (221)	213 DU	967	79	-	18	-	61	83	-	51	-	32	
Strip Retail Plaza (<40k) (822)	3.2 KSF	174	8	-	5	-	3	21	-	11	-	10	
High-Turnover (Sit-Down) Restaurant (932)	3.2 KSF	343	31	-	17	-	14	29	-	18	-	11	
Total Block B			1,484	118	-	40	-	78	133	-	80	-	53
Block C2													
Multifamily Housing (Mid-Rise) (221)	138 DU	627	51	-	12	-	39	54	-	33	-	21	
Strip Retail Plaza (<40k) (822)	2.6 KSF	142	6	-	4	-	2	17	-	9	-	8	
High-Turnover (Sit-Down) Restaurant (932)	2.6 KSF	279	25	-	14	-	11	24	-	15	-	9	
Total Block C			1,048	82	-	30	-	52	95	-	57	-	38
Block D													
Multifamily Housing (Mid-Rise) (221)	451 DU	2,048	167	-	38	-	129	176	-	107	-	69	
Strip Retail Plaza (<40k) (822)	7.4 KSF	403	17	-	10	-	7	49	-	25	-	24	
High-Turnover (Sit-Down) Restaurant (932)	7.4 KSF	793	71	-	39	-	32	67	-	41	-	26	
Total Block D			3,244	255	-	87	-	168	292	-	173	-	119
Block E													
Multifamily Housing (Mid-Rise) (221)	178 DU	808	66	-	15	-	51	69	-	42	-	27	
Strip Retail Plaza (<40k) (822)	4.2 KSF	229	10	-	6	-	4	28	-	14	-	14	
High-Turnover (Sit-Down) Restaurant (932)	4.2 KSF	450	40	-	22	-	18	38	-	23	-	15	
Total Block E			1,487	116	-	43	-	73	135	-	79	-	56
Block F													
Multifamily Housing (Mid-Rise) (221)	70 DU	318	26	-	6	-	20	27	-	16	-	11	
Strip Retail Plaza (<40k) (822)	1.6 KSF	87	4	-	2	-	2	11	-	6	-	5	
High-Turnover (Sit-Down) Restaurant (932)	1.6 KSF	172	15	-	8	-	7	14	-	9	-	5	
Total Block F			577	45	-	16	-	29	52	-	31	-	21
Block G													
Multifamily Housing (Low-Rise) (220)	17 DU	115	7	-	2	-	5	9	-	6	-	3	
Strip Retail Plaza (<40k) (822)	0.4 KSF	22	1	-	1	-	0	3	-	2	-	1	
High-Turnover (Sit-Down) Restaurant (932)	0.4 KSF	43	4	-	2	-	2	4	-	2	-	2	
Total Block G			180	12	-	5	-	7	16	-	10	-	6
Block H													
Multifamily Housing (Mid-Rise) (221)	158 DU	717	58	-	13	-	45	62	-	38	-	24	
Strip Retail Plaza (<40k) (822)	2.3 KSF	125	5	-	3	-	2	15	-	8	-	7	
High-Turnover (Sit-Down) Restaurant (932)	2.3 KSF	247	22	-	12	-	10	21	-	13	-	8	
Total Block H			1,089	85	-	28	-	57	98	-	59	-	39
Block I													
Multifamily Housing (Mid-Rise) (221)	119 DU	540	44	-	10	-	34	46	-	28	-	18	
Strip Retail Plaza (<40k) (822)	1.9 KSF	103	4	-	2	-	2	13	-	7	-	6	
High-Turnover (Sit-Down) Restaurant (932)	1.9 KSF	204	18	-	10	-	8	17	-	10	-	7	
Total Block I			847	66	-	22	-	44	76	-	45	-	31
Block J													
Multifamily Housing (Mid-Rise) (221)	138 DU	627	51	-	12	-	39	54	-	33	-	21	
Strip Retail Plaza (<40k) (822)	2.4 KSF	131	6	-	4	-	2	16	-	8	-	8	
High-Turnover (Sit-Down) Restaurant (932)	2.4 KSF	257	23	-	13	-	10	22	-	13	-	9	
Total Block J			1,015	80	-	29	-	51	92	-	54	-	38
Total Project Trips													
Multifamily Housing (Low-Rise) (220)	17 DU	115	7	-	2	-	5	9	-	6	-	3	
Multifamily Housing (Mid-Rise) (221)	1,783 DU	8,096	660	-	151	-	509	695	-	424	-	271	
Strip Retail Plaza (<40k) (822)	30.0 KSF	1,634	70	-	42	-	28	199	-	103	-	96	
High-Turnover (Sit-Down) Restaurant (932)	30.0 KSF	3,217	287	-	158	-	129	272	-	166	-	106	
Total Project Trips			13,062	1,024	-	353	-	671	1,175	-	699	-	476
Existing Trips			-3,990	-259	-	-139	-	-120	-412	-	-213	-	-199
Total Project Trips-Existing Trips			9,072	765	-	214	-	551	763	-	486	-	277
Internal Capture													
Restaurant			-427	-34	-	-5	-	-29	-40	-	-22	-	-18
Residential			-442	-34	-	-29	-	-5	-40	-	-18	-	-22
Project Internal Capture			-869	-68	-	-34	-	-34	-80	-	-40	-	-40
Total Project Trips-Existing Trips-Internal Capture Trips			8,203	697	-	180	-	517	683	-	446	-	237
Mode Share Reduction [Walking, Biking, Transit, other (Replica Big Data - Jan--Jun '23)]		-22%	-1,805	-153		-40		-113	-150		-98		-52
Total External Trips			6,398	544		140		404	533		348		185
Pass-bys													
High-Turnover (Sit-Down) Restaurant (932)			-91	-	-	-	-	-	-91	-	-57	-	-34
Net New Project Trips Trips			6,307	544	-	140	-	404	442	-	291	-	151

Notes

1. Trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition (2023).

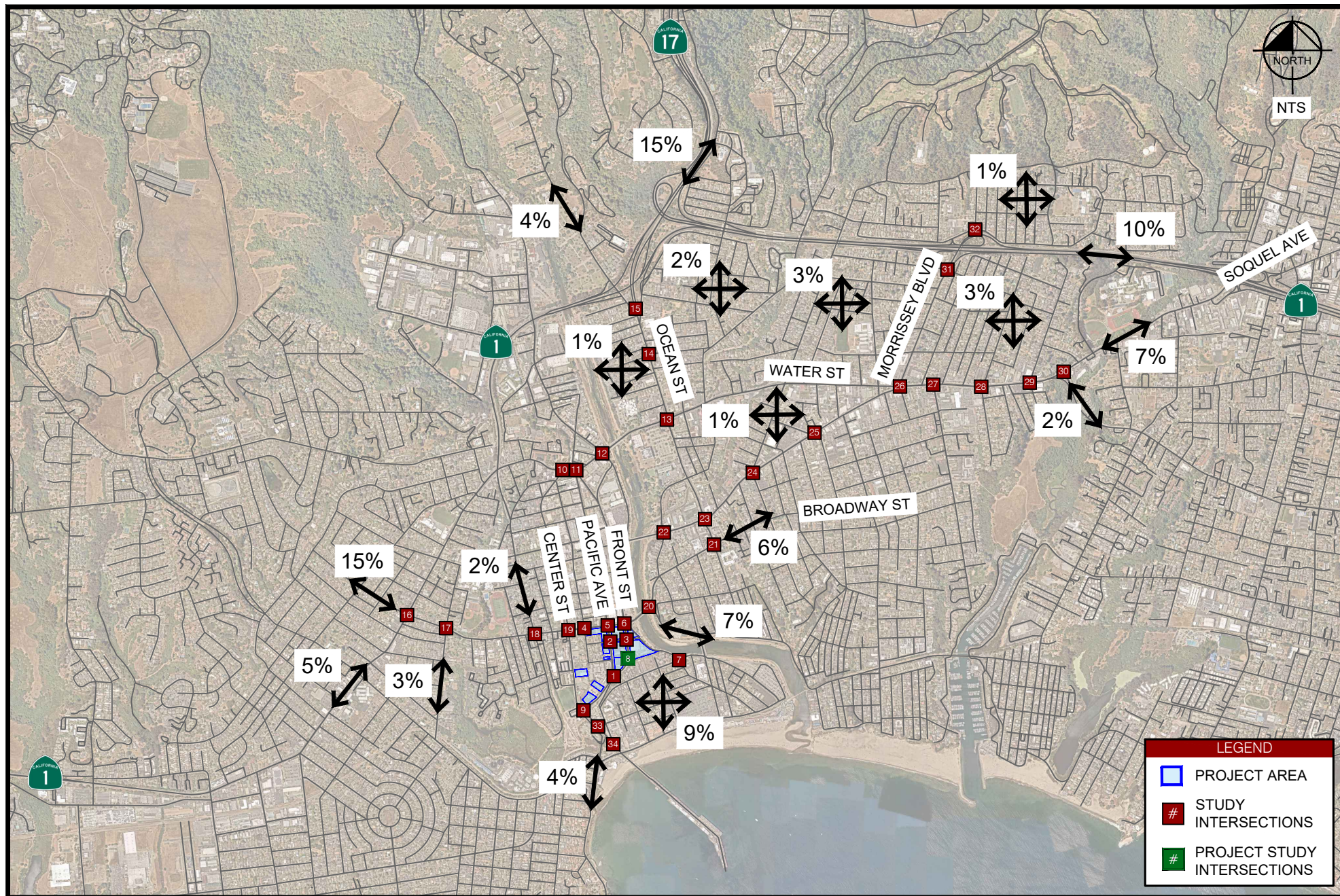
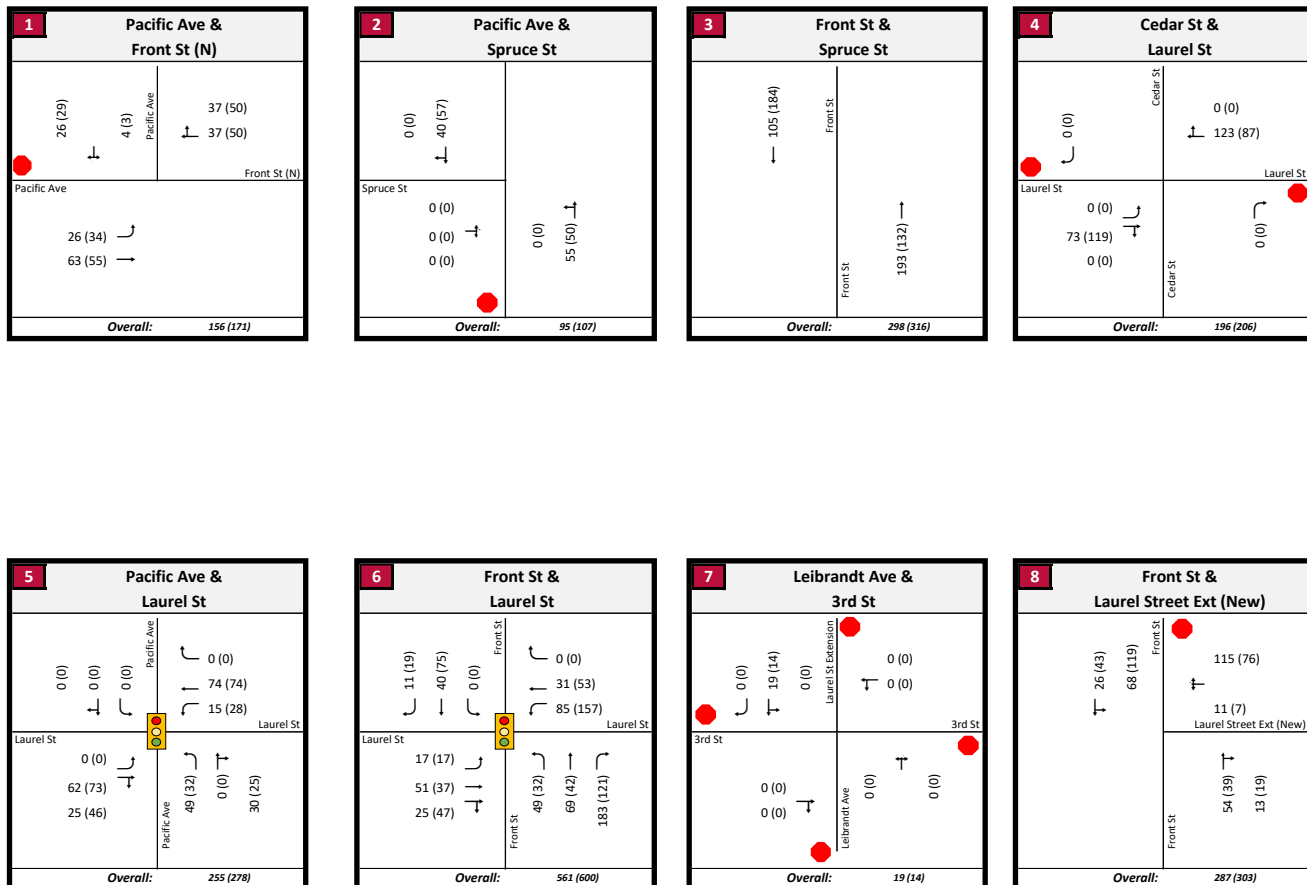


Figure 3

Project Trip Distribution



Turning Movement Legend

Right (R) Through (T) Left (L)	Right (R) Through (T) Left (L)
Left (L) Through (T) Right (R)	Left (L) Through (T) Right (R)

LEGEND



Intersection ID

XX (XX) AM (PM) Volumes



Stop Sign



Signal

Net Project trips illustrated
exclude existing trip credits.

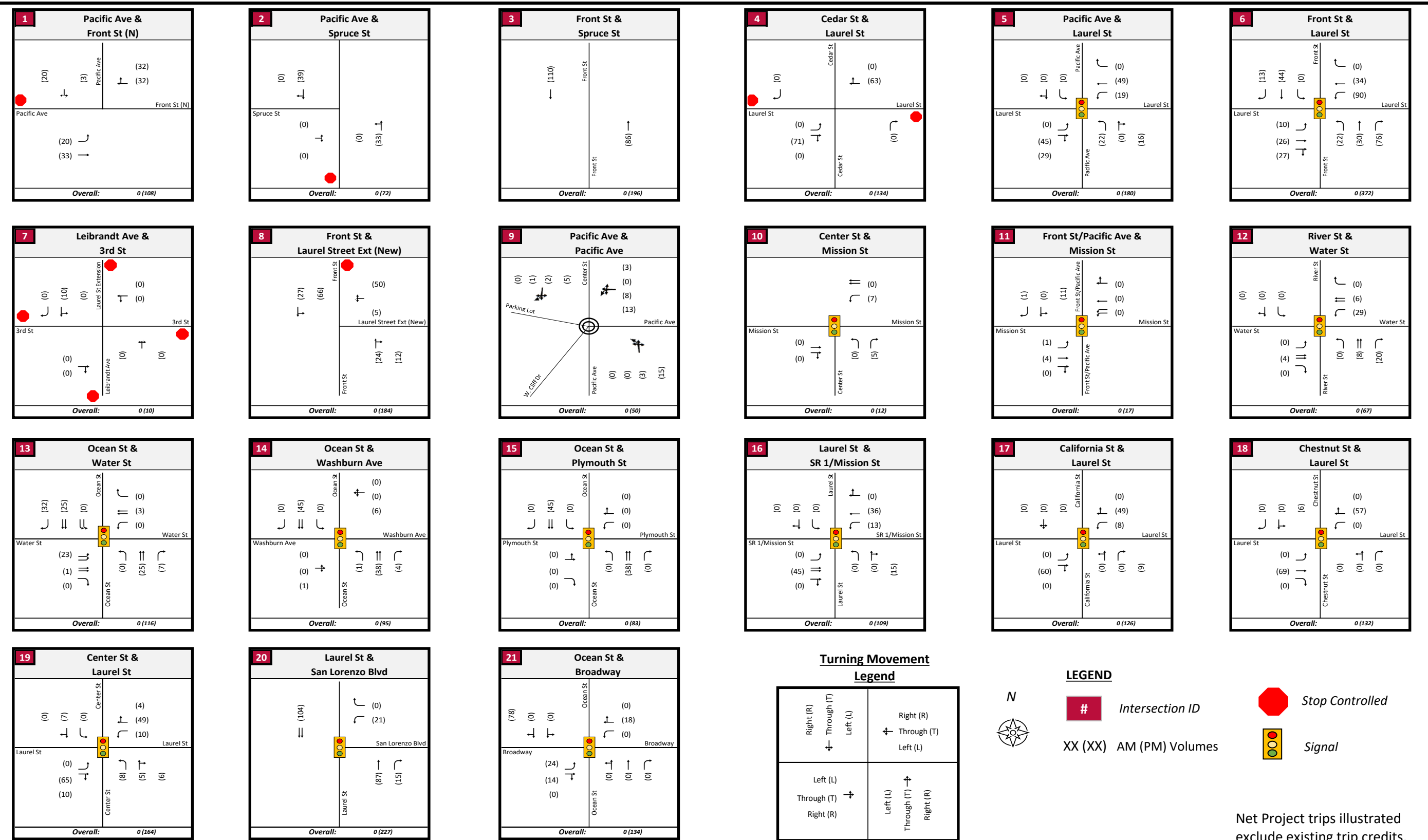
Table 6 - Cumulative Conditions Project Trip Generation

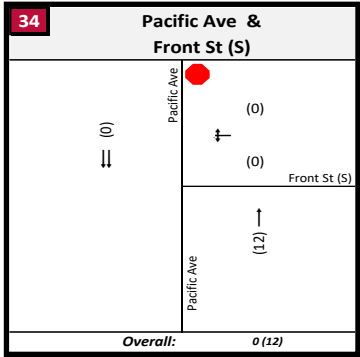
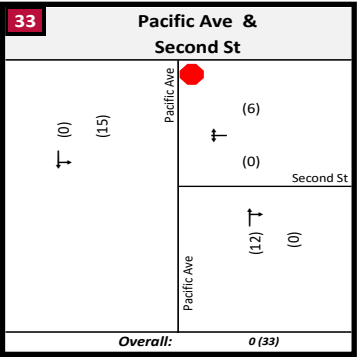
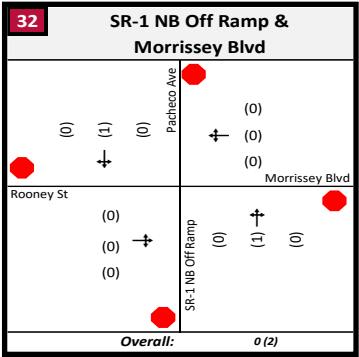
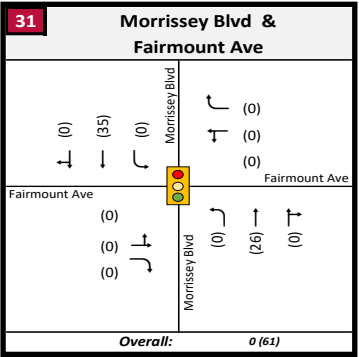
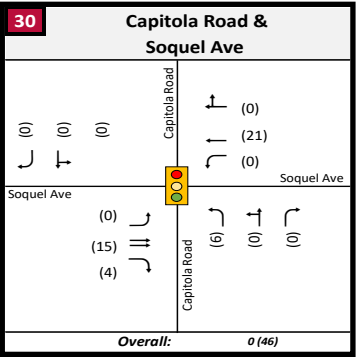
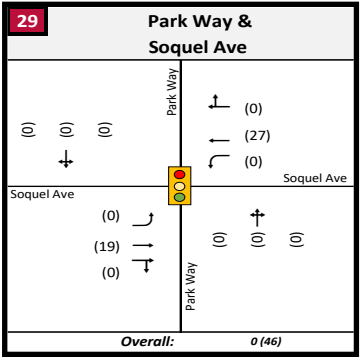
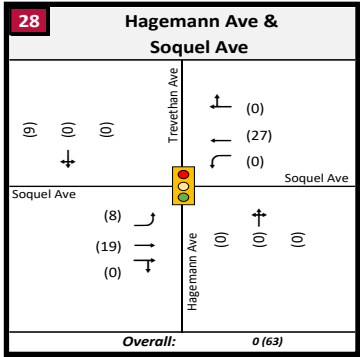
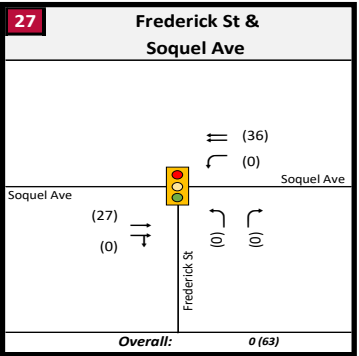
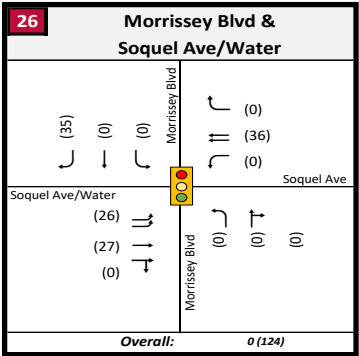
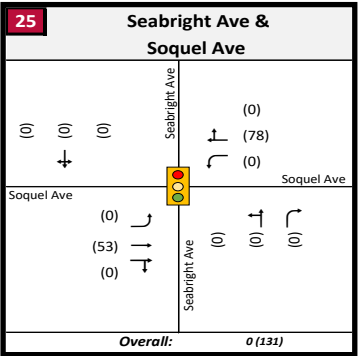
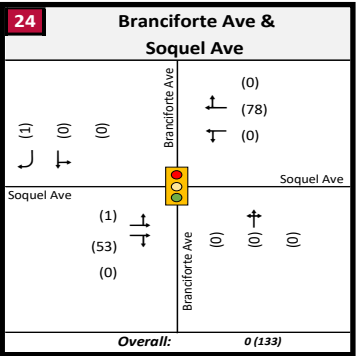
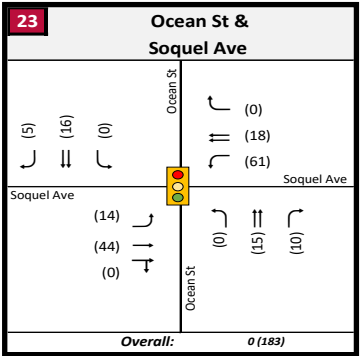
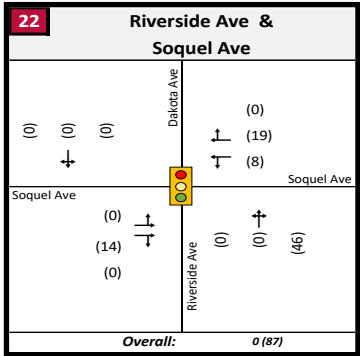
ITE Generation Factors												
Land Use (ITE Code)	# Unit(s)/ KSF	Daily Trips	AM Peak-Hour					PM Peak-Hour				
			Total Trips	IN		OUT		Total Trips	IN		OUT	
				%	Trips	%	Trips		%	Trips	%	Trips
Single-Family Detached Housing (210)	- DU	-	-	26%	-	74%	-	-	63%	-	37%	-
Multifamily Housing (Low-Rise) (220)	- DU	6.74	0.40	24%	-	76%	-	0.51	63%	-	37%	-
Multifamily Housing (Mid-Rise) (221)	- DU	4.54	0.37	23%	-	77%	-	0.39	61%	-	39%	-
Motel (320)	- Rooms	3.35	0.35	37%	-	63%	-	0.36	54%	-	46%	-
Strip Retail Plaza (<40k) (822)	- KSF	54.45	2.36	60%	-	40%	-	6.59	50%	-	50%	-
High-Turnover (Sit-Down) Restaurant (932)	- KSF	107.20	9.57	55%	-	45%	-	9.05	61%	-	39%	-
Fast-Food Restaurant w/o D.T. (933)	- KSF	450.49	43.18	58%	-	42%	-	33.21	50%	-	50%	-
Automobile Care Center (942)	- KSF	31.10	2.25	66%	-	34%	-	3.11	48%	-	52%	-
Automobile Sales (Used) (841)	- KSF	27.06	2.13	76%	-	24%	-	3.75	47%	-	53%	-
Assisted Living (254)	- Beds	2.60	0.18	60%	-	40%	-	0.24	39%	-	61%	-

Project Trip Generation												
Block A												
Multifamily Housing (Mid-Rise) (221)	123	DU	558	46	-	11	-	35	48	-	29	- 19
Strip Retail Plaza (<40k) (822)	4.0	KSF	218	9	-	5	-	4	26	-	13	- 13
High-Turnover (Sit-Down) Restaurant (932)	4.0	KSF	429	38	-	21	-	17	36	-	22	- 14
Total Block A			1,205	93	-	37	-	56	110	-	64	- 46
Block B												
Multifamily Housing (Mid-Rise) (221)	82	DU	372	30	-	7	-	23	32	-	20	- 12
Strip Retail Plaza (<40k) (822)	3.2	KSF	174	8	-	5	-	3	21	-	11	- 10
High-Turnover (Sit-Down) Restaurant (932)	3.2	KSF	343	31	-	17	-	14	29	-	18	- 11
Total Block B			889	69	-	29	-	40	82	-	49	- 33
Block C2												
Multifamily Housing (Mid-Rise) (221)	55	DU	250	20	-	5	-	15	21	-	13	- 8
Strip Retail Plaza (<40k) (822)	2.6	KSF	142	6	-	4	-	2	17	-	9	- 8
High-Turnover (Sit-Down) Restaurant (932)	2.6	KSF	279	25	-	14	-	11	24	-	15	- 9
Total Block C			671	51	-	23	-	28	62	-	37	- 25
Block D												
Multifamily Housing (Mid-Rise) (221)	157	DU	713	58	-	13	-	45	61	-	37	- 24
Strip Retail Plaza (<40k) (822)	7.4	KSF	403	17	-	10	-	7	49	-	25	- 24
High-Turnover (Sit-Down) Restaurant (932)	7.4	KSF	793	71	-	39	-	32	67	-	41	- 26
Total Block D			1,909	146	-	62	-	84	177	-	103	- 74
Block E												
Multifamily Housing (Mid-Rise) (221)	68	DU	309	25	-	6	-	19	27	-	16	- 11
Strip Retail Plaza (<40k) (822)	4.2	KSF	229	10	-	6	-	4	28	-	14	- 14
High-Turnover (Sit-Down) Restaurant (932)	4.2	KSF	450	40	-	22	-	18	38	-	23	- 15
Total Block E			988	75	-	34	-	41	93	-	53	- 40
Block F												
Multifamily Housing (Mid-Rise) (221)	27	DU	123	10	-	2	-	8	11	-	7	- 4
Strip Retail Plaza (<40k) (822)	1.6	KSF	87	4	-	2	-	2	11	-	6	- 5
High-Turnover (Sit-Down) Restaurant (932)	1.6	KSF	172	15	-	8	-	7	14	-	9	- 5
Total Block F			382	29	-	12	-	17	36	-	22	- 14
Block G												
Multifamily Housing (Low-Rise) (220)	7	DU	47	3	-	1	-	2	4	-	3	- 1
Strip Retail Plaza (<40k) (822)	0.4	KSF	22	1	-	1	-	0	3	-	2	- 1
High-Turnover (Sit-Down) Restaurant (932)	0.4	KSF	43	4	-	2	-	2	4	-	2	- 2
Total Block G			112	8	-	4	-	4	11	-	7	- 4
Block H												
Multifamily Housing (Mid-Rise) (221)	62	DU	281	23	-	5	-	18	24	-	15	- 9
Strip Retail Plaza (<40k) (822)	2.3	KSF	125	5	-	3	-	2	15	-	8	- 7
High-Turnover (Sit-Down) Restaurant (932)	2.3	KSF	247	22	-	12	-	10	21	-	13	- 8
Total Block H			653	50	-	20	-	30	60	-	36	- 24
Block I												
Multifamily Housing (Mid-Rise) (221)	48	DU	218	18	-	4	-	14	19	-	12	- 7
Strip Retail Plaza (<40k) (822)	1.9	KSF	103	4	-	2	-	2	13	-	7	- 6
High-Turnover (Sit-Down) Restaurant (932)	1.9	KSF	204	18	-	10	-	8	17	-	10	- 7
Total Block I			525	40	-	16	-	24	49	-	29	- 20
Block J												
Multifamily Housing (Mid-Rise) (221)	55	DU	250	20	-	5	-	15	21	-	13	- 8
Strip Retail Plaza (<40k) (822)	2.4	KSF	131	6	-	4	-	2	16	-	8	- 8
High-Turnover (Sit-Down) Restaurant (932)	2.4	KSF	257	23	-	13	-	10	22	-	13	- 9
Total Block J			638	49	-	22	-	27	59	-	34	- 25
Total Project Trips												
Multifamily Housing (Low-Rise) (220)	7	DU	47	3	-	1	-	2	4	-	3	- 1
Multifamily Housing (Mid-Rise) (221)	677	DU	3,074	250	-	58	-	192	264	-	162	- 102
Strip Retail Plaza (<40k) (822)	30.0	KSF	1,634	70	-	42	-	28	199	-	103	- 96
High-Turnover (Sit-Down) Restaurant (932)	30.0	KSF	3,217	287	-	158	-	129	272	-	166	- 106
Total Project Trips			7,972	610	-	259	-	351	739	-	434	- 305
Existing Trips			-3,990	-259	-	-139	-	-120	-412	-	-213	- -199
Total Project Trips-Existing Trips			3,982	351	-	120	-	231	327	-	221	- 106
Internal Capture												
Restaurant			-415	-32	-	-29	-	-3	-40	-	-22	- -18
Residential			-428	-3	-	-3	-	-	-18	-	-18	- -
Project Internal Capture			-843	-35	-	-32	-	-3	-58	-	-40	- -18
Total Project Trips-Existing Trips-Internal Capture Trips			3,139	316	-	88	-	228	269	-	181	- 88
Mode Share Reduction [Walking, Biking, Transit, other (Replica Big Data - Jan--Jun '23)]			-22%	-691		-70		-19	-51		-40	- -19
Total External Trips			2,448	246		69		177	210		141	69
Pass-bys												
High-Turnover (Sit-Down) Restaurant (932)			-91	-	-	-	-	-	-91	-	-57	- -34
Net New Project Trips			2,357	246	-	69	-	177	119	-	84	- 35

Notes

1. Trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition (2023).





Turning Movement Legend

Right (R) Through (T) Left (L)	Right (R) Through (T) Left (L)
Left (L) Through (T) Right (R)	Left (L) Through (T) Right (R)



LEGEND

Intersection ID

XX (XX) AM (PM) Volumes

Stop Controlled

Signal

Net Project trips illustrated exclude existing trip credits.

Capacity Analysis Methodology

Level of Service Definitions

The level of service (LOS) of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A, which represents minimal delay, to F, which represents heavy delay and a facility that is operating at or near its functional capacity. LOS for this study was determined using methods defined in the *Highway Capacity Manual (HCM) 6th Edition* (“HCM6”).

Table 7 presents intersection LOS definitions as defined in the HCM.

Intersection Analysis

The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection.

Table 7 – Intersection Level of Service Criteria

Level of Service (LOS)	Un-Signalized	Signalized
	Average Control Delay* (sec/veh)	Average Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: *Highway Capacity Manual, 6th Edition*

* Applied to the worst lane/lane group(s) for SSSC

LOS for the study intersections was determined using the Synchro® traffic analysis software. Synchro 11 uses HCM6 methodology to analyze intersection delay and LOS.

Roundabout Analysis

Roundabout analysis often requires careful calibration of the software model to conditions observed in the field to obtain accurate V/C. SIDRA 9.1 allows for this level of calibration to reflect actual operating conditions observed at study roundabouts. The National Cooperative Highway Research Program (NCHRP) Report 672 states that a volume-to-capacity (V/C) ratio in the range of 0.85 to 0.90 represents an approximate threshold for satisfactory operation. However, a V/C ratio should not be considered an absolute threshold and that it is encouraged to conduct additional sensitivity analysis to evaluate effects on delays or queues.

Caltrans Facilities

Per the Caltrans “Vehicle Miles Traveled-Focused Transportation Impact Study” Caltrans no longer has a LOS threshold standard and provides guidance on VMT analysis. Therefore, the LOS threshold from the City of Santa Cruz was utilized to identify deficiencies for informational purposes. The City of Santa Cruz establishes LOS D as the minimum acceptable LOS for all intersections and roadways within the City limits.

EXISTING (2023) CONDITIONS

Existing traffic counts were collected to establish the existing conditions of the study area intersections.

Counts were performed in during the following time periods:

- February 2, 2023 – Provided by the City of Santa Cruz
- March 25, 2023 – Provided by the City of Santa Cruz
- October 26, 2023 – Collected by Kimley-Horn

Counts were collected between 7-9 AM and 4-6 PM during typical weekdays (Tuesday-Thursday) with a particular emphasis on capturing conditions during normal peak periods.

Existing (2023) Conditions AM and PM peak-hour traffic volumes are presented in **Figure 6**. All traffic count data sheets, along with calculations showing intersection growth rate calculation, are provided in **Appendix A**. Analysis worksheets for the scenario are included in **Appendix B**

Intersections

Table 8 presents the intersection operating conditions for this scenario. As indicated in **Table 8**, the following study intersections were determined to operate at an unacceptable level of service:

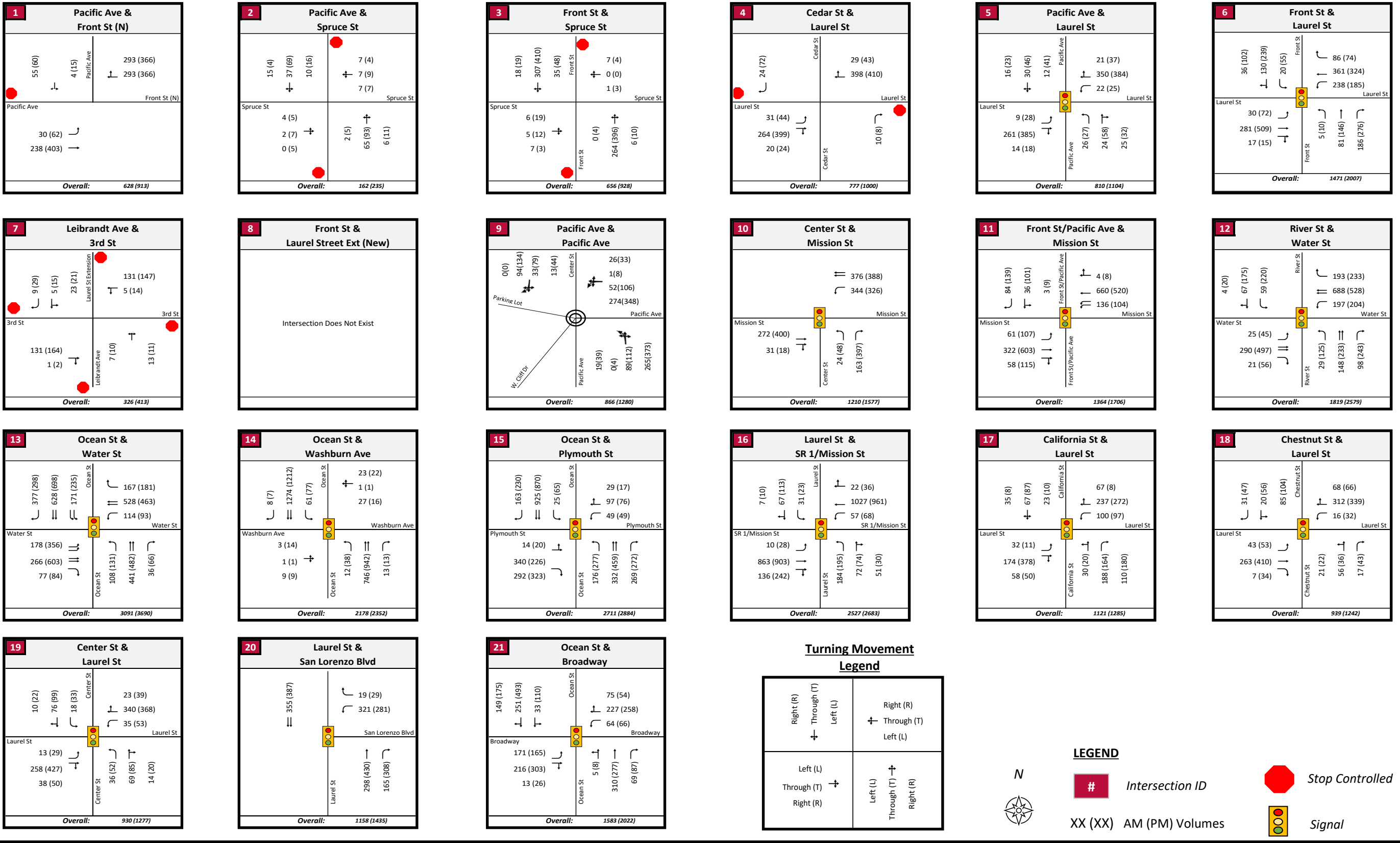
- Intersection #6: Front St & Laurel St – AM Conditions
- Intersection #18: Chestnut St & Laurel St – AM & PM Conditions
- Intersection #23: Ocean St & Soquel Ave – PM Conditions

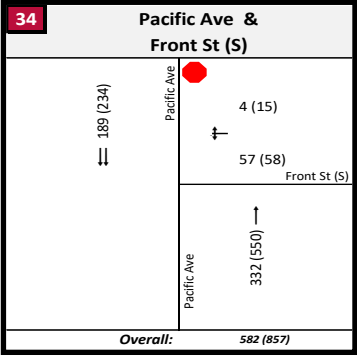
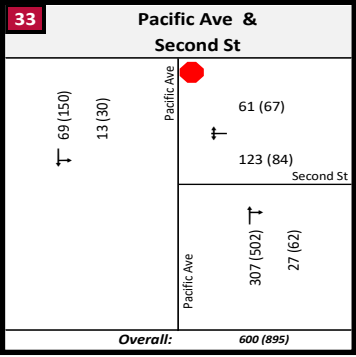
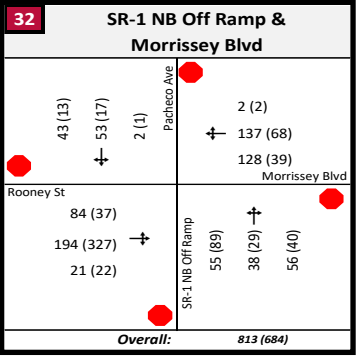
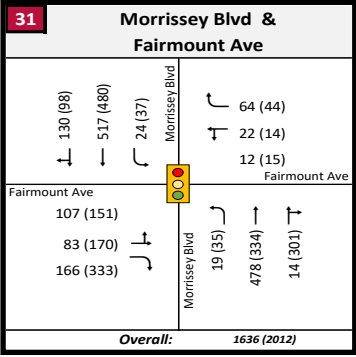
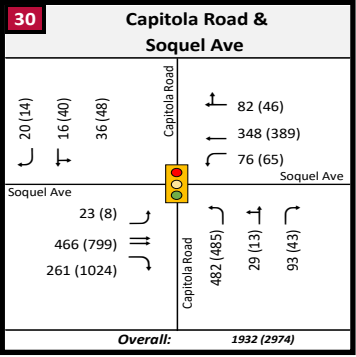
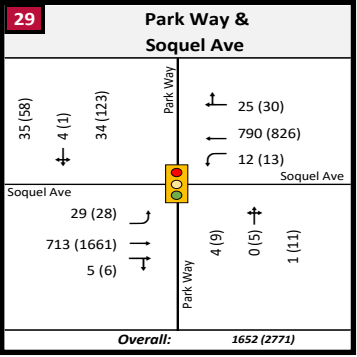
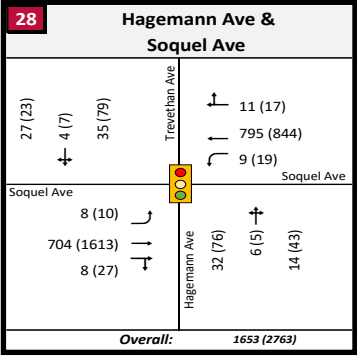
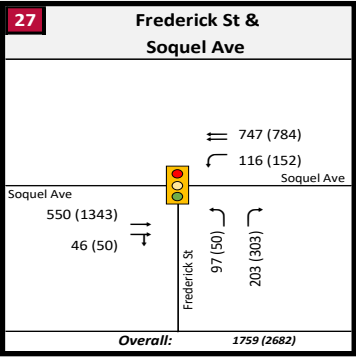
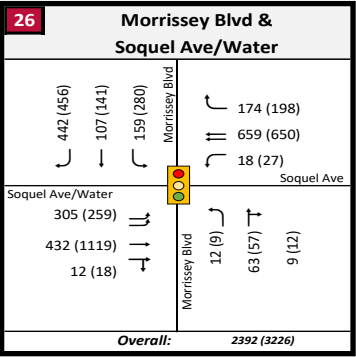
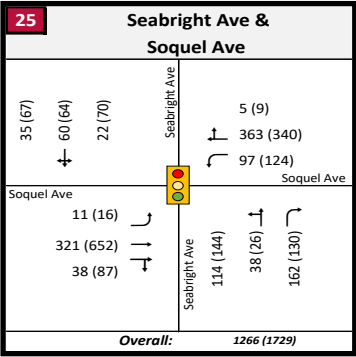
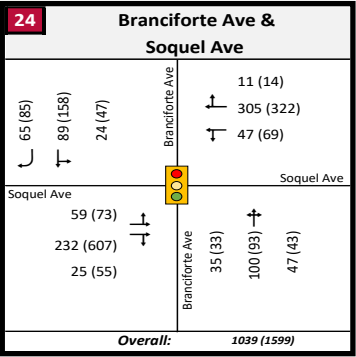
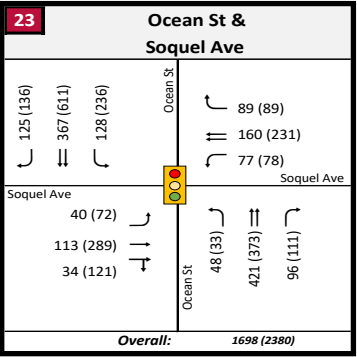
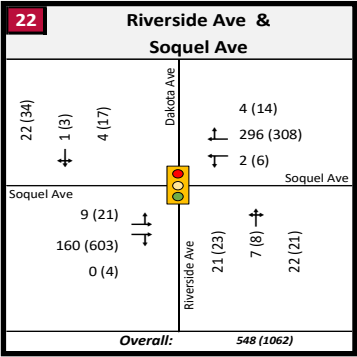
Table 8 – Existing (2023) Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing	
					Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC	AM	11.2	B
				PM	13.7	B
2	Pacific Ave & Spruce St	D	TWSC	AM	10.2	B
				PM	11.0	B
3	Front St & Spruce St	D	TWSC	AM	14.8	B
				PM	24.7	C
4	Cedar St & Laurel St	D	TWSC	AM	11.5	B
				PM	12.0	B
5	Pacific Ave & Laurel St	D	Signal	AM	19.7	B
				PM	21.5	C
6	Front St & Laurel St	D	Signal	AM	62.0	E
				PM	42.0	D
7	Laurel St Extension & 3rd St	D	AWSC	AM	8.0	A
				PM	8.4	A
8	Front St and Laurel St Extension	Intersection Does Not Exist				
9	W. Cliff Dr/Center St & Pacific Ave	D	RAB	AM	0.31	-
				PM	0.46	-
10	Center St & Mission St	D	Signal	AM	17.9	B
				PM	30.3	C
11	Front St/Pacific Ave & Mission St	D	Signal	AM	18.4	B
				PM	21.7	C
12	River St & Water St	D	Signal	AM	19.3	B
				PM	44.8	D
13	Ocean St & Water St	D	Signal	AM	34.8	C
				PM	38.9	D
14	Ocean St & Washburn Ave	D	Signal	AM	7.6	A
				PM	18.2	B
15	Ocean St & Plymouth St	D	Signal	AM	16.7	B
				PM	16.2	B
16	SR 1/Mission St & Laurel St	D	Signal	AM	24.4	C
				PM	37.3	D
17	California St & Laurel St	D	Signal	AM	13.0	B
				PM	13.6	B
18	Chestnut St & Laurel St	D	Signal	AM	60.5	E
				PM	92.1	F
19	Center St & Laurel St	D	Signal	AM	20.3	C
				PM	22.7	C
20	San Lorenzo Blvd & Laurel St	D	Signal	AM	23.7	C
				PM	19.2	B
21	Ocean St & Broadway	D	Signal	AM	23.1	C
				PM	27.8	C
22	Riverside Ave & Soquel Ave	D	Signal	AM	9.7	A
				PM	10.4	B
23	Ocean St & Soquel Ave	D	Signal	AM	24.4	C
				PM	86.8	F
24	Branciforte Ave & Soquel Ave	D	Signal	AM	26.1	C
				PM	32.3	C
25	Seabright Ave & Soquel Ave	D	Signal	AM	32.1	C

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing	
					Delay (sec) or V/C	LOS
				PM	35.6	D
26	Morrissey Blvd/Water St & Soquel Ave	D	Signal	AM	19.2	B
				PM	24.3	C
27	Frederick St & Soquel Ave	D	Signal	AM	11.1	B
				PM	32.8	C
28	Trevethan Ave/ Hagemann Ave & Soquel Ave	D	Signal	AM	19.9	B
				PM	18.6	B
29	Park Way & Soquel Ave	D	Signal	AM	18.8	B
				PM	10.0	A
30	Capitola Road & Soquel Ave	D	Signal	AM	23.8	C
				PM	25.2	C
31	Morrissey Blvd & Fairmount Ave/ SR-1 SB On-Ramp	D	Signal	AM	18.5	B
				PM	23.6	C
32	Morrissey Blvd & SR-1 NB Ramps/ Rooney St/Pacheco Ave	D	TWSC	AM	14.1	B
				PM	12.3	B
33	Pacific Ave & Second St	D	TWSC	AM	13.0	B
				PM	18.3	C
34	Pacific Ave & Front St (S)	D	TWSC	AM	12.5	B
				PM	16.8	C

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency.
Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.





Turning Movement

Legend

Right (R) Through (T) Left (L)	Right (R) Through (T) Left (L)
Left (L) Through (T) Right (R)	Left (L) Through (T) Right (R)



LEGEND

#

Intersection ID

XX (XX)

AM (PM) Volumes

Stop Controlled

Signal

EXISTING (2023) PLUS APPROVED PROJECTS CONDITIONS

The following approved Projects were considered for this analysis:

- 530 Front St
- 412-508 Front St
- Pacific Front Mixed Use Development (808-816 Pacific St & 309-311 Front St)
- 130 Center St
- Pacific Station North (no parking on the site)
- Pacific Station South (no parking on the site)
- 119 Lincoln St
- 324 Front St
- 524, 532, and 538 Center St (no parking on the site)

For Projects where parking is not included on the site, the City's existing parking garages were identified since it was assumed that Project trips will utilize nearby parking garages to access these Projects. It was determined that the following garages will be utilized:

- Pacific Station North & South
 - o Parking garage located on the northwest corner of the intersection of Front Street & Soquel Avenue
- 524, 532, and 538 Center St
 - o Parking garage located on the northeast corner of the intersection of Cedar Street & Walnut Avenue

These parking garages are outside of the study area for this scenario. In addition, the City has begun construction on both Projects without the need for a traffic study. Therefore, for this analysis it was assumed that the trips generated by these two Projects would be negligible.

Approved Project trips were added to the existing count data and using these volumes, LOS was determined at the study facilities. Existing (2023) Plus Approved Projects peak-hour traffic volumes are presented in **Figure 7** for the AM and PM peak-hours. Analysis worksheets for the scenario are included in **Appendix C**.

The following intersection improvements were included based on the Approved Projects:

- Intersection #5: Pacific Avenue & Laurel Street
 - o Install a SBL pocket
 - o Install a WBR pocket
- Intersection #6: Front Street & Laurel Street
 - o Install a SBR pocket.

Intersections

Table 9 presents the intersection operating conditions for this analysis scenario. As indicated in **Table 9**, the following study intersections were determined to operate at an unacceptable level of service:

- Intersection #6: Front St & Laurel St – AM Conditions

It should be noted that the following intersections decreased in delay with the addition of background Projects:

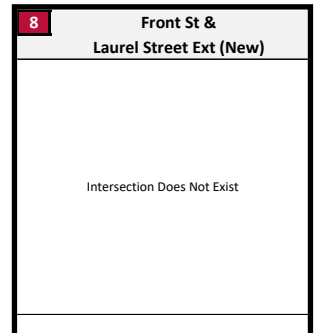
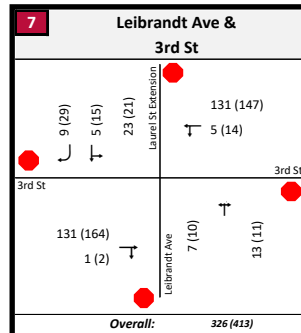
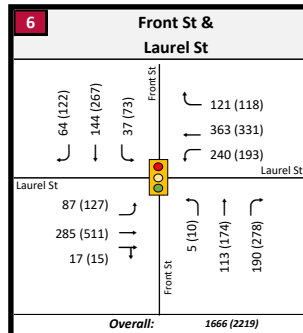
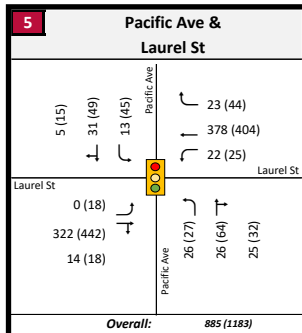
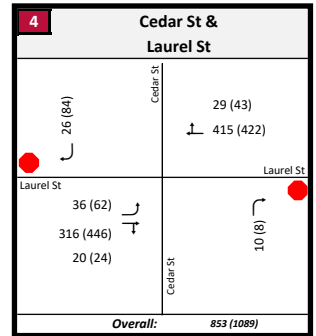
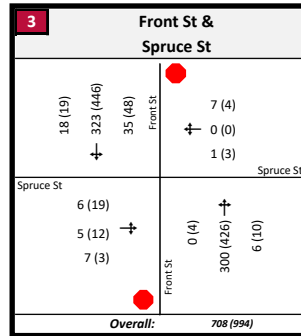
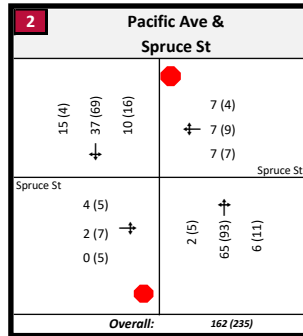
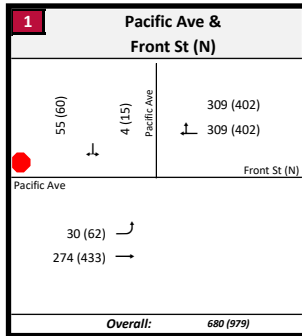
- Intersection #5: Pacific Avenue & Laurel Street
 - o This is because with the addition of the Pacific Station North development existing buses that utilize Pacific Avenue will be rerouted to Front Street.

- o Buses were removed from the southbound right and eastbound left movements at this intersection and rerouted to Intersection #6.
- Intersection #6: Front Street & Laurel Street
 - o The addition of a southbound right turn pocket decreased the delay since the intersection has more capacity.

Table 9 – Existing (2023) Plus Approved Projects Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing		Existing Plus Approved Projects	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC	AM	11.2	B	11.4	B
				PM	13.7	B	14.4	B
2	Pacific Ave and Spruce St	D	TWSC	AM	10.2	B	10.2	B
				PM	11.0	B	11.0	B
3	Front St and Spruce St	D	TWSC	AM	14.8	B	15.5	C
				PM	24.7	C	27.4	D
4	Cedar St and Laurel St	D	TWSC	AM	11.5	B	11.7	B
				PM	12.0	B	12.3	B
5	Pacific Ave and Laurel St	D	Signal	AM	19.7	B	17.7	B
				PM	21.5	C	21.4	C
6	Front St and Laurel St	D	Signal	AM	62.0	E	60.6	E
				PM	42.0	D	41.8	D
7	Laurel St Extension and 3rd St	D	AWSC	AM	8.0	A	8.0	A
				PM	8.4	A	8.4	A
8	Front St and Laurel St Extension	Intersection Does Not Exist						

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.



Turning Movement Legend

Right (R) Through (T) Left (L)	Right (R) Through (T) Left (L)
Left (L) Through (T) Right (R)	Left (L) Through (T) Right (R)

LEGEND



Intersection ID

XX (XX) AM (PM) Volumes



Stop Sign



Signal

EXISTING (2023) PLUS APPROVED PROJECTS PLUS PROJECT CONDITIONS

As previously discussed, the number of trips anticipated to be generated by the proposed Project was derived using data included in the *ITE Trip Generation Manual, 11th Edition*.

Before Project traffic was distributed and assigned to the roadway network, Existing trips generated in **Table 4** were removed from the study network. Existing volumes with the removal of the existing land uses within the Project area. In addition, existing volumes were rerouted on the network because the Project is anticipating on relocating/closing the following roadways:

- Laurel Street Extension Relocation – Closure of the existing Laurel Street Extension and relocating roadway south of Block D. Proposed operations will remain the same as Existing Conditions: two-way traffic to any driveways or commercial access for Block D, one-way, east-bound through connection to Third Street.
- Closure of Spruce Street between Pacific Avenue and Front Street.

The following intersection control was updated with the addition of the Project:

- Intersection #1: Front Street (N) & Pacific Avenue
 - o Convert the existing side street stop control to a roundabout

Net Project trips were then assigned to the roadway network using engineering judgement and existing roadway volume patterns. Using these volumes, LOS was determined at the study facilities. Existing (2023) plus Approved Projects Plus Project peak-hour traffic volumes are presented in **Figure 8** for the AM and PM peak-hours. Analysis worksheets for the scenario are included in **Appendix D**.

Intersections

Table 10 presents the intersection operating conditions for this analysis scenario. As indicated in **Table 10**, the following study intersections were determined to operate at an unacceptable level of service:

- Intersection #6: Front Street & Laurel Street – ***Project Induced Deficiency***
 - o It should be noted that the increase in delay at this intersection is larger when compared to the intersection of Pacific Avenue and Laurel Street. This is due to how the Project loads onto this intersection as provided in **Figure 4**:
 - Trips traveling to/from the northeast are unable to drive southbound on Pacific Avenue since north of Cathcart Street is one-way street for northbound traffic. In addition, Pacific Avenue north of Cathcart Street is a 15 MPH road in a downtown Santa Cruz. Therefore, traffic traveling to/from the northeast was assumed to drive on either Ocean Street or Front Street to travel to/from the Project which increases the delay since more traffic is traveling through this intersection.

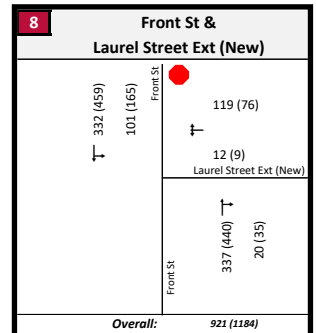
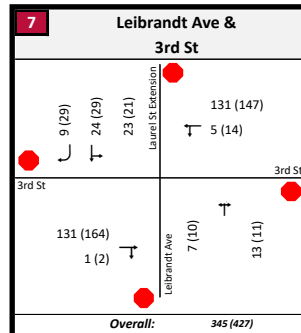
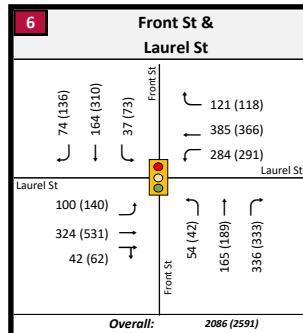
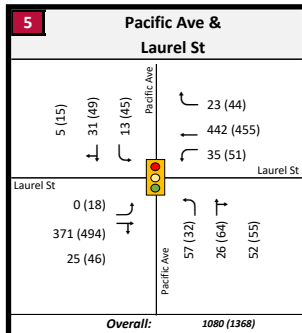
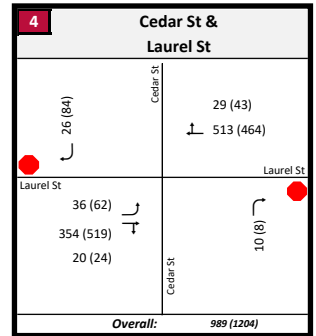
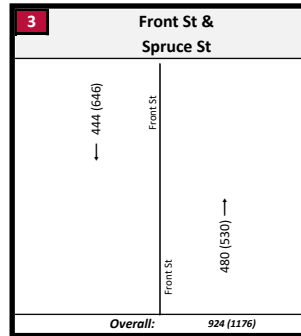
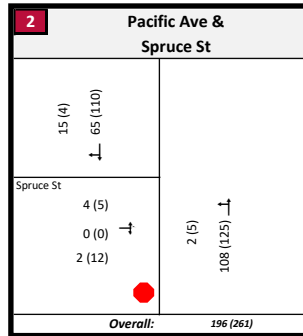
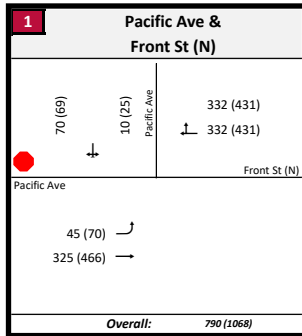
It should be noted that the following intersections decreased in delay with the addition of the Project:

- Intersection #1: Front Street (N) & Pacific Avenue
 - o The Project converts this intersection to a roundabout which is a more efficient intersection when compared to the existing side street stop control.
- Intersection #2: Pacific Avenue and Spruce Street
 - o The Project closes east leg of this intersection converting it from four-way intersection to a T-intersection. This results in more efficient intersection operations since there are fewer conflicting movements.

Table 10 – Existing (2023) Plus Approved Projects Plus Proposed Project Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing Plus Approved Projects		Existing Plus Approved Projects Plus Project	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC/RAB	AM	11.4	B	0.30	-
				PM	14.4	B	0.43	-
2	Pacific Ave and Spruce St	D	TWSC	AM	10.2	B	9.8	A
				PM	11.0	B	10.1	B
3	Front St and Spruce St	D	TWSC	AM	15.5	C	Intersection Does Not Exist	
				PM	27.4	D		
4	Cedar St and Laurel St	D	TWSC	AM	11.7	B	12.7	B
				PM	12.3	B	12.8	B
5	Pacific Ave and Laurel St	D	Signal	AM	17.7	B	19.0	B
				PM	21.4	C	22.4	C
6	Front St and Laurel St	D	Signal	AM	60.6	E	76.5	E
				PM	41.8	D	65.2	E
7	Laurel St Extension and 3rd St	D	AWSC	AM	8.0	A	8.2	A
				PM	8.4	A	8.4	A
8	Front St and Laurel St Extension	D	TWSC	AM	Intersection Does Not Exist		13.2	B
				PM			16.1	C

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.



Turning Movement Legend

Right (R) Through (T) Left (L)	Right (R) Through (T) Left (L)
Left (L) Through (T) Right (R)	Left (L) Through (T) Right (R)

LEGEND



Intersection ID

XX (XX) AM (PM) Volumes



Stop Sign



Signal

CUMULATIVE (2030) CONDITIONS

Peak-hour traffic volumes for Cumulative conditions were obtained from the City of Santa Cruz 2030 General Plan and include the growth anticipated by the University of California at Santa Cruz² at the time the General Plan EIR was completed. The volumes provided by the City in **Appendix E**. The following intersections are not included in the volumes provided by the City and instead were analyzed by using a mix of volume balancing and interpolating the background growth from the Santa Cruz County Travel Demand Model (SCC TDM) between the model's base year (2019) and future year (2043) and adding it to the counts obtained for Existing Conditions:

- Intersection #3: Front Street & Spruce Street
- Intersection #6: Front Street & Laurel Street
- Intersection #10: Center Street & Mission Street
- Intersection #13: Ocean Street & Water Street
- Intersection #16: SR 1/Mission Street & Laurel Street
- Intersection #18: Chestnut Street & Laurel Street
- Intersection #23: Ocean Street & Soquel Avenue
- Intersection #25: Seabright Avenue & Soquel Avenue
- Intersection #33: Pacific Avenue & Second Street
- Intersection #34: Pacific Avenue & Front Street (S)

The following intersection improvements were assumed to be implemented per the City of Santa Cruz 2030 General Plan²:

- Intersection #13: Ocean Street & Water Street
 - o Revised geometry:
 - Eastbound: 2 EBL, 2 EBT, & 1 EBR
 - Westbound: 1 WBL, 2 WBT, 1 WBR
 - Northbound: 1 NBL, 2 NBT, 1 NBR
 - Southbound: 2 SBL, 2 SBT, 1 SBR
- Intersection #16: SR 1/Mission Street & Laurel Street
 - o Eastbound: Add EBR
- Intersection #21: Ocean Street & Broadway
 - o Prohibit lefts from Ocean Street
 - Trips were rerouted to nearby intersections based on this improvement.
- Intersection #24: Branciforte Avenue & Soquel Avenue
 - o Eastbound: 1 EBL, 1 EBT, & 1 EBT/R
 - o Westbound 1 WBL & WBT/R
 - o Remove split phasing.
- Intersection #27: Frederik Street & Soquel Avenue
 - o Add northbound right turn overlap.

Using the volumes developed for Cumulative Conditions, LOS was determined at the study intersections. Cumulative (2030) plus Proposed Project peak-hour traffic volumes are presented in **Figure 9** for the AM and PM peak-hours. Detailed calculations are included in **Appendix F**.

² *Transportation Study Requirements for Development – Cumulative Buildout Volumes City of Santa Cruz Critical Intersections*. City of Santa Cruz. August 6, 2021.

Intersections

Table 11 presents the intersection operating conditions for this analysis scenario. As indicated in **Table 11**, the following study intersections were determined to operate at an LOS of E or lower:

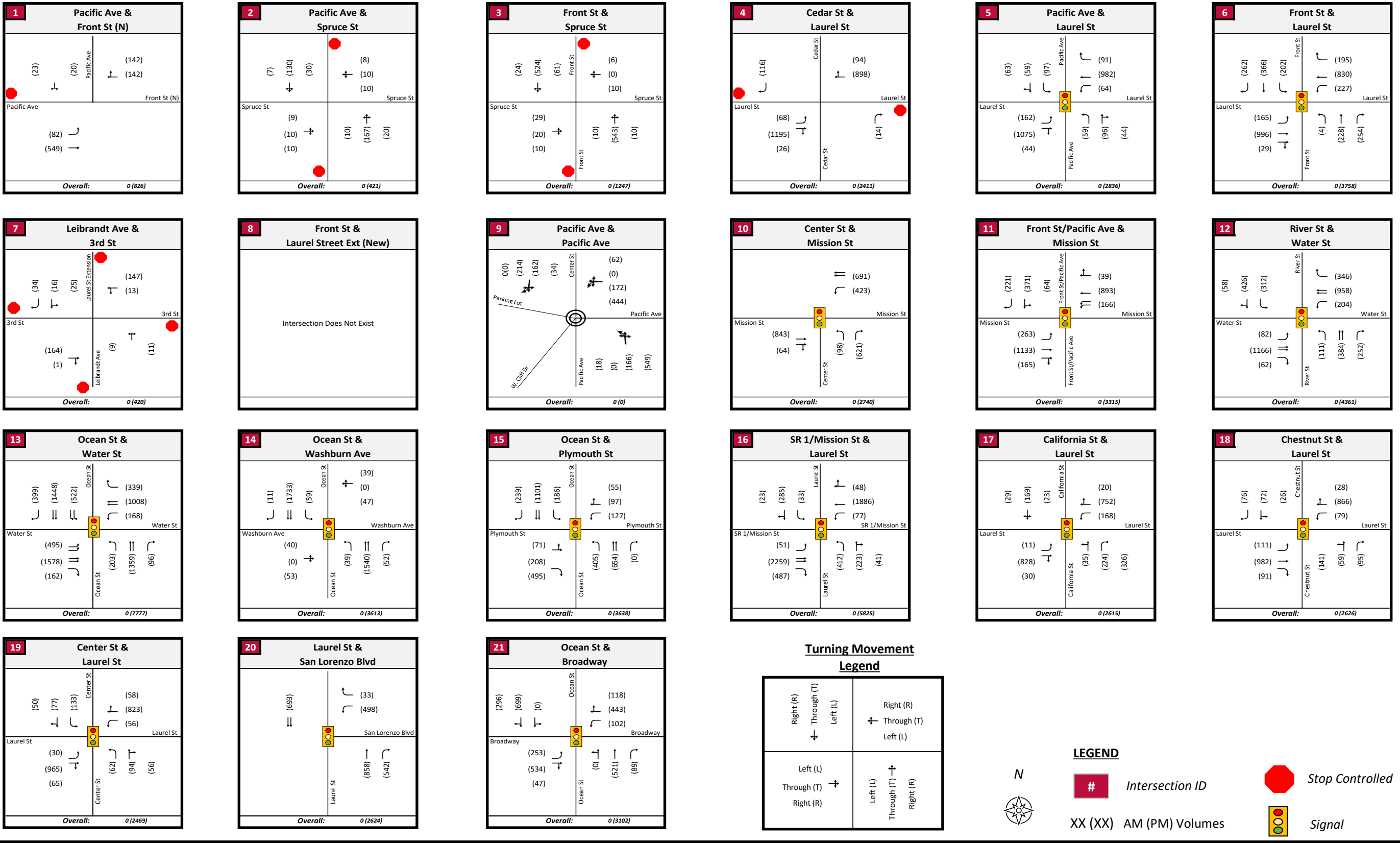
- Intersection #3: Front Street & Spruce Street
- Intersection #6: Front Street & Laurel Street
- Intersection #13: Ocean Street & Water Street
- Intersection #18: Chestnut Street & Laurel Street
- Intersection #23: Ocean Street & Soquel Street
- Intersection #33: Pacific Avenue & Second Street

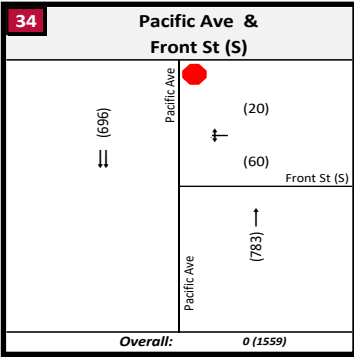
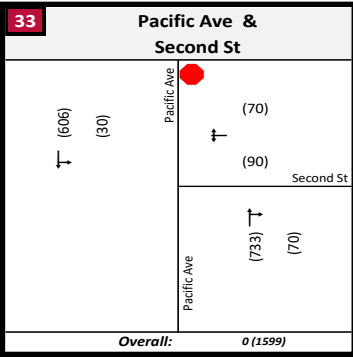
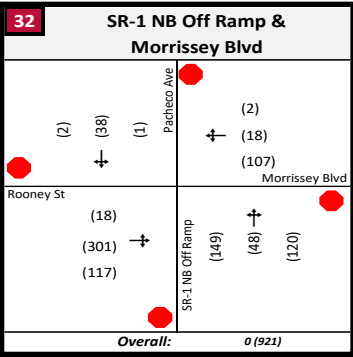
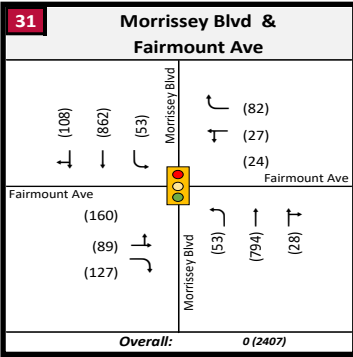
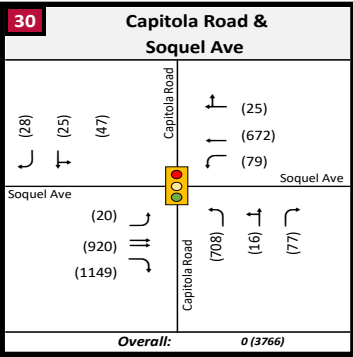
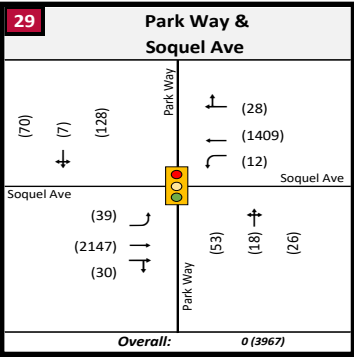
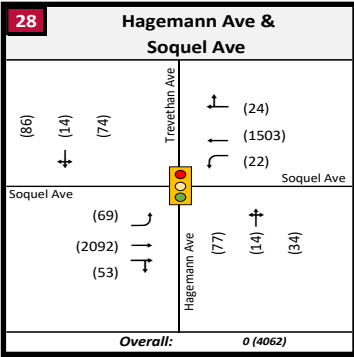
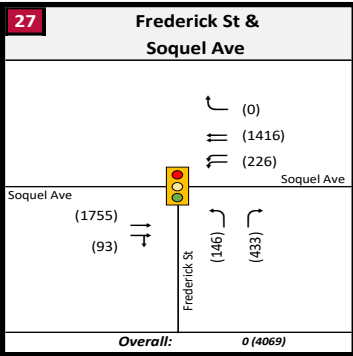
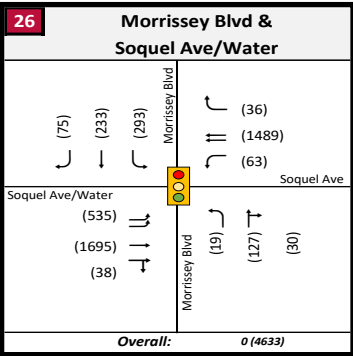
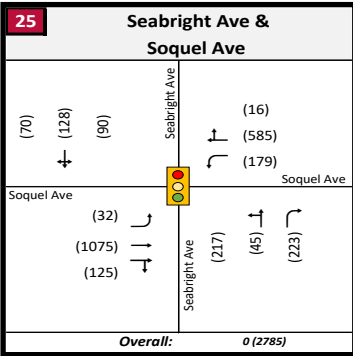
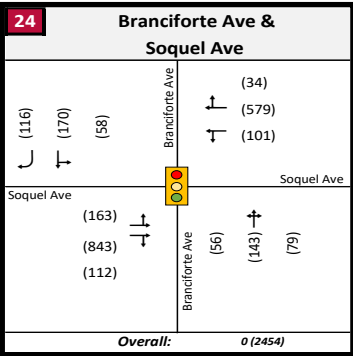
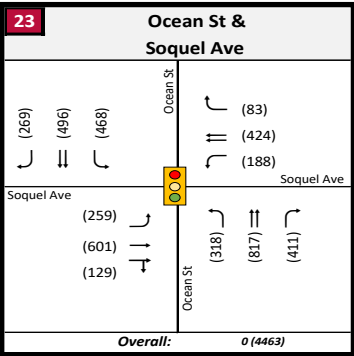
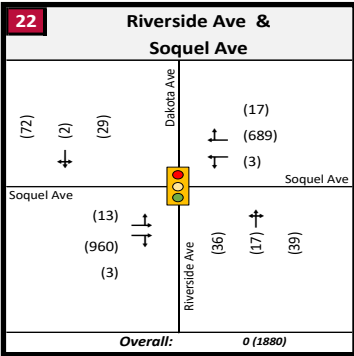
Table 11 – Cumulative (2030) Conditions Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative (2030) Conditions with TIF Improvements	
					Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC	AM	-	-
				PM	18.4	C
2	Pacific Ave & Spruce St	D	TWSC	AM	-	-
				PM	12.1	B
3	Front St & Spruce St	D	TWSC	AM	-	-
				PM	39.4	E
4	Cedar St & Laurel St	D	TWSC	AM	-	-
				PM	24.0	C
5	Pacific Ave & Laurel St	D	Signal	AM	-	-
				PM	39.4	D
6	Front St & Laurel St	D	Signal	AM	-	-
				PM	59.0	E
7	Laurel St Extension & 3rd St	D	AWSC	AM	-	-
				PM	8.3	A
8	Front St & Laurel St Extension	Intersection Does Not Exist				
9	W. Cliff Dr/Center St & Pacific Ave	D	RAB	AM	-	-
				PM	0.68	-
10	Center St & Mission St	D	Signal	AM	-	-
				PM	51.2	D
11	Front St/Pacific Ave & Mission St	D	Signal	AM	-	-
				PM	49.1	D
12	River St & Water St	D	Signal	AM	-	-
				PM	42.1	D
13	Ocean St & Water St	D	Signal	AM	-	-
				PM	126.0	F
14	Ocean St & Washburn Ave	D	Signal	AM	-	-
				PM	22.9	C
15	Ocean St & Plymouth St	D	Signal	AM	-	-
				PM	26.7	C
16	SR 1/Mission St & Laurel St	D	Signal	AM	-	-
				PM	51.1	D
17	California St & Laurel St	D	Signal	AM	-	-
				PM	31.4	C
18	Chestnut St & Laurel St	D	Signal	AM	-	-
				PM	83.4	F
19	Center St & Laurel St	D	Signal	AM	-	-
				PM	28.8	C
20	San Lorenzo Blvd & Laurel St	D	Signal	AM	-	-
				PM	17.6	B
21	Ocean St & Broadway	D	Signal	AM	-	-
				PM	35.2	D
22	Riverside Ave & Soquel Ave	D	Signal	AM	-	-
				PM	12.7	B
23	Ocean St & Soquel Ave	D	Signal	AM	-	-
				PM	64.3	E
24	Branciforte Ave & Soquel Ave	D	Signal	AM	-	-
				PM	25.6	C
25	Seabright Ave & Soquel Ave	D	Signal	AM	-	-
				PM	48.3	D

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative (2030) Conditions with TIF Improvements	
					Delay (sec) or V/C	LOS
26	Morrissey Blvd/Water St & Soquel Ave	D	Signal	AM	-	-
				PM	44.6	D
27	Frederick St & Soquel Ave	D	Signal	AM	-	-
				PM	25.3	C
28	Trevethan Ave/Hagemann Ave & Soquel Ave	D	Signal	AM	-	-
				PM	5.8	A
29	Park Way & Soquel Ave	D	Signal	AM	-	-
				PM	18.9	B
30	Capitola Road & Soquel Ave	D	Signal	AM	-	-
				PM	43.5	D
31	Morrissey Blvd & Fairmount Ave/SR-1 SB On-Ramp	D	Signal	AM	-	-
				PM	37.0	D
32	Morrissey Blvd & SR-1 NB Ramps/Rooney St/Pacheco Ave	D	AWSC	AM	-	-
				PM	12.6	B
33	Pacific Ave & Second Street	D	TWSC	AM	-	-
				PM	56.8	F
34	Pacific Ave & Front Street (S)	D	TWSC	AM	-	-
				PM	28.6	D

Notes: Bold represents operations below the General Plan goal of LOS D. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.





Turning Movement Legend

Right (R) Through (T) Left (L) +	Right (R) Through (T) Left (L) +
Left (L) Through (T) Right (R) +	Left (L) Through (T) Right (R) +



LEGEND

Intersection ID

XX (XX) AM (PM) Volumes

Stop Controlled

Signal

CUMULATIVE (2030) PLUS PROJECT CONDITIONS

Cumulative volumes were assigned on the new roadway network as follows:

- Laurel Street Extension Relocation – Closure of the existing Laurel Street Extension and relocating roadway south of Block D. Proposed operations will remain the same as Existing Conditions
- Closure of Spruce Street between Pacific Avenue and Front Street

The following intersection control was updated with the addition of the Project:

- Intersection #1: Front Street (N) & Pacific Avenue
 - o Convert the existing two-way stop to a roundabout

Using the volumes developed for Cumulative plus Project conditions, LOS was determined at the study facilities. Cumulative (2030) plus Proposed Project peak-hour traffic volumes are presented in **Figure 10** for the AM and PM peak-hours. Analysis worksheets for the scenario are included in **Appendix H**.

Intersections

Table 12 presents the intersection operating conditions for this analysis scenario. **Table 12** indicates the 2030 intersection operations without the project road network and traffic added, as well as the traffic operations with the project traffic and road network added. Spruce Street is planned to be partially closed. When open, only certain vehicles will be allowed to enter the roadway and the operations will not be affected. Vehicles may include local deliveries, VIP access, etc. As indicated in, the following study intersections were determined to operate at an unacceptable level of service under this analysis condition. Deficient level of service was found at the following intersections:

- Intersection #6: Front Street & Laurel Street
- Intersection #13: Ocean Street & Water Street
- Intersection #18: Chestnut Street & Laurel Street
- Intersection #23: Ocean Street & Soquel Street
- Intersection #33: Pacific Avenue & Second Street

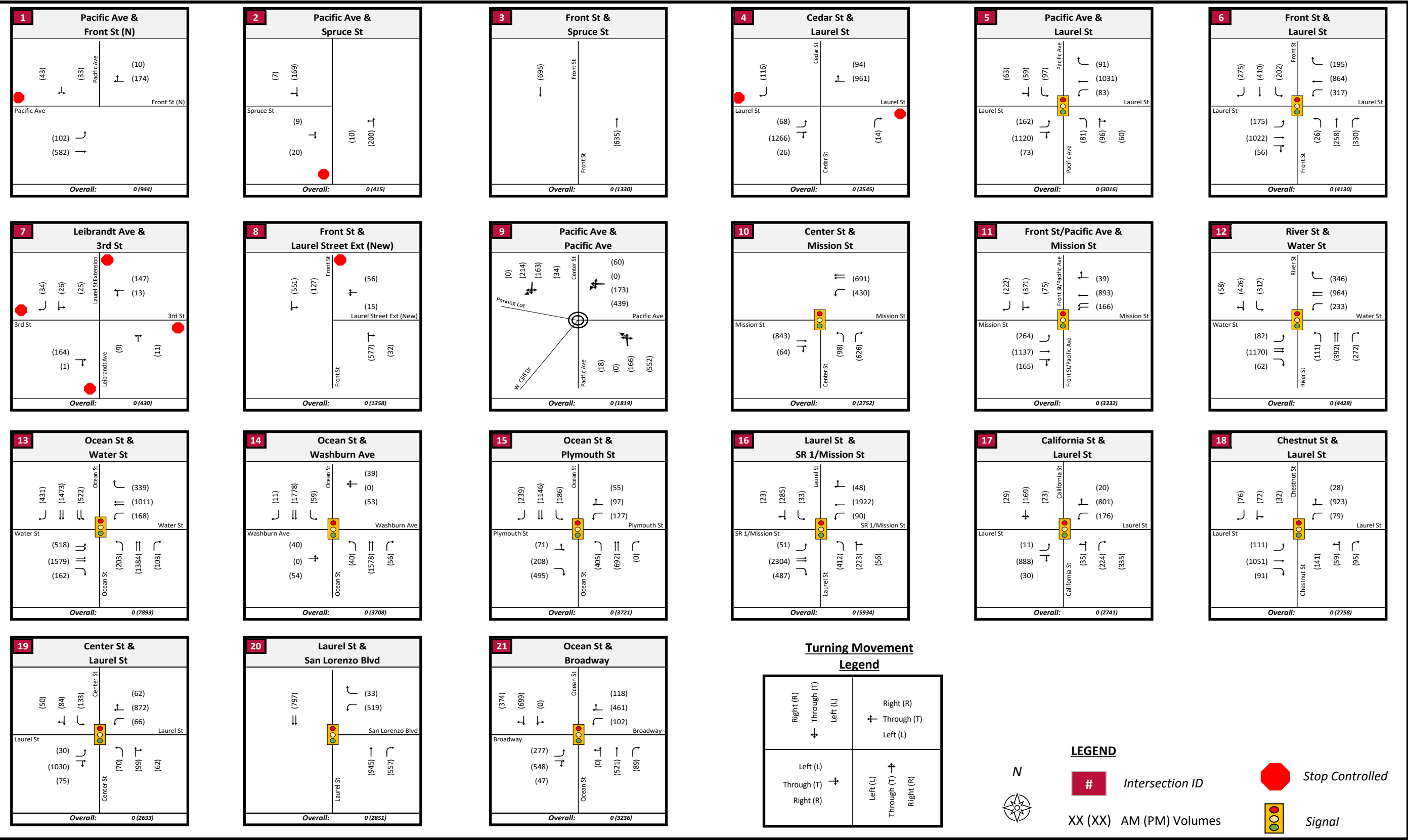
The project does create any LOS deficiencies under Cumulative plus Project conditions.

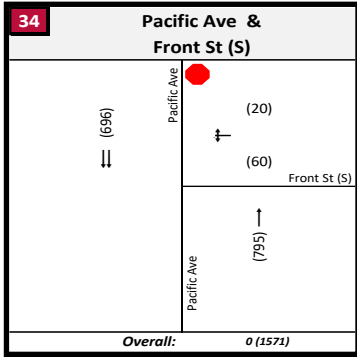
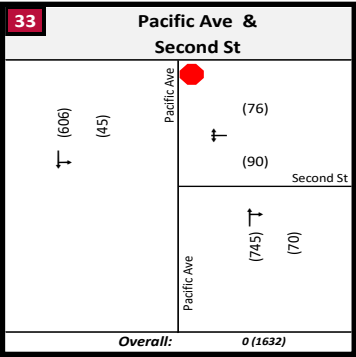
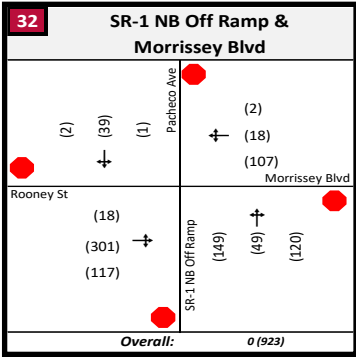
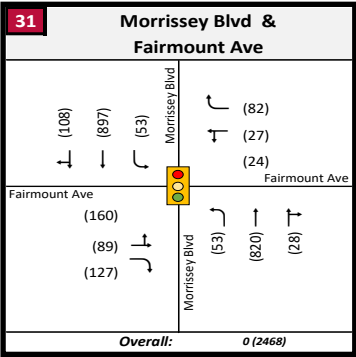
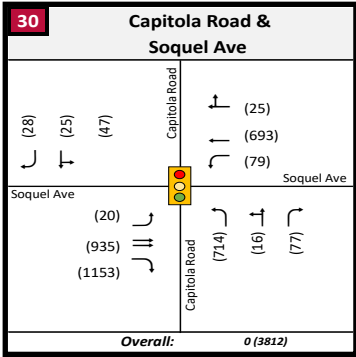
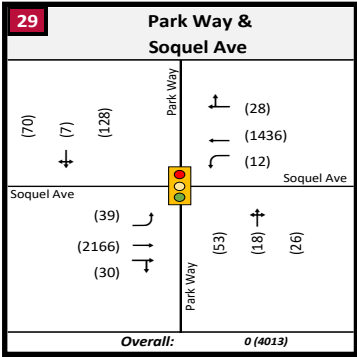
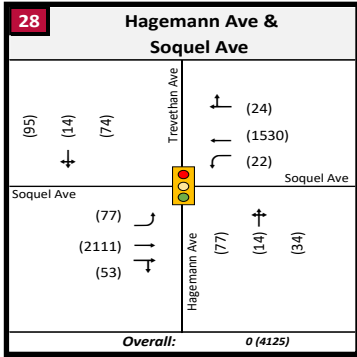
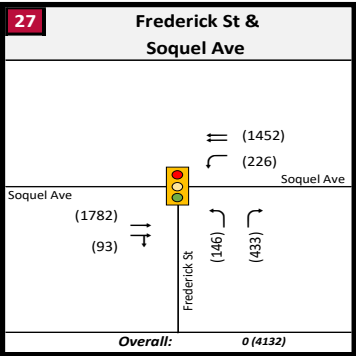
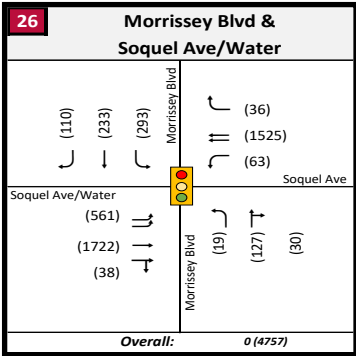
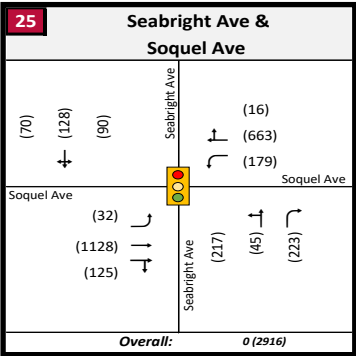
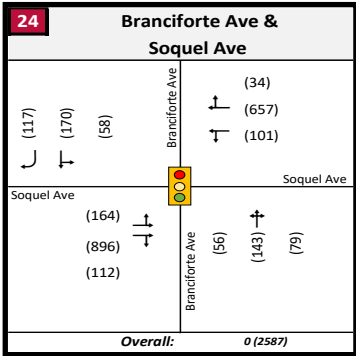
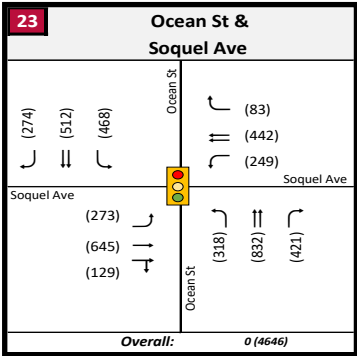
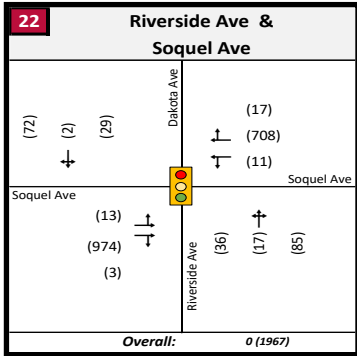
Table 12 – Cumulative (2030) Plus Project Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative (2030) Conditions With TIF Improvements		Cumulative (2030) With TIF Improvements And Adding the Project Traffic	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC	AM	-	-	-	-
				PM	18.4	C	0.55	-
2	Pacific Ave & Spruce St	D	TWSC	AM	-	-	-	-
				PM	12.1	B	10.7	B
3	Front St & Spruce St	D	TWSC	AM	-	-	Intersection Does Not Exist	
				PM	39.4	E		
4	Cedar St & Laurel St	D	TWSC	AM	-	-	-	-
				PM	24.0	C	26.8	D
5	Pacific Ave & Laurel St	D	Signal	AM	-	-	-	-
				PM	39.4	D	48.2	D
6	Front St & Laurel St	D	Signal	AM	-	-	-	-
				PM	59.0	E	68.0	E
7	Laurel St Extension & 3rd St	D	AWSC	AM	-	-	-	-
				PM	8.3	A	8.3	A
8	Front St & Laurel St Extension	D	TWSC	AM	Intersection Does Not Exist		-	-
				PM			20.1	C
9	W. Cliff Dr/Center St & Pacific Ave	D	RAB	AM	-	-	-	-
				PM	0.68	-	0.68	-
10	Center St & Mission St	D	Signal	AM	-	-	-	-
				PM	51.2	D	51.2	D
11	Front St/Pacific Ave & Mission St	D	Signal	AM	-	-	-	-
				PM	49.1	D	50.8	D
12	River St & Water St	D	Signal	AM	-	-	-	-
				PM	42.1	D	44.6	D
13	Ocean St & Water St	D	Signal	AM	-	-	-	-
				PM	126.0	F	129.9	F
14	Ocean St & Washburn Ave	D	Signal	AM	-	-	-	-
				PM	22.9	C	23.9	C
15	Ocean St & Plymouth St	D	Signal	AM	-	-	-	-
				PM	26.7	C	27.8	C
16	SR 1/Mission St & Laurel St	D	Signal	AM	-	-	-	-
				PM	51.1	D	52.0	D
17	California St & Laurel St	D	Signal	AM	-	-	-	-
				PM	31.4	C	37.6	D
18	Chestnut St & Laurel St	D	Signal	AM	-	-	-	-
				PM	83.4	F	90.4	F
19	Center St & Laurel St	D	Signal	AM	-	-	-	-
				PM	28.8	C	36.1	D
20	San Lorenzo Blvd & Laurel St	D	Signal	AM	-	-	-	-
				PM	17.6	B	22.1	C
21	Ocean St & Broadway	D	Signal	AM	-	-	-	-
				PM	35.2	D	38.9	D
22	Riverside Ave & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	12.7	B	12.8	B
23	Ocean St & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	64.3	E	70.5	E
24	Branciforte Ave & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	25.6	C	31.4	C
25	Seabright Ave & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	48.3	D	50.6	D

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative (2030) Conditions With TIF Improvements		Cumulative (2030) With TIF Improvements And Adding the Project Traffic	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
26	Morrissey Blvd/Water St & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	44.6	D	50.5	D
27	Frederick St & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	25.3	C	26.6	C
28	Trevethan Ave/Hagemann Ave & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	5.8	A	5.8	A
29	Park Way & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	18.9	B	19.2	B
30	Capitola Road & Soquel Ave	D	Signal	AM	-	-	-	-
				PM	43.5	D	43.8	D
31	Morrissey Blvd & Fairmount Ave/SR-1 SB On-Ramp	D	Signal	AM	-	-	-	-
				PM	37.0	D	41.5	D
32	Morrissey Blvd & SR-1 NB Ramps/ Rooney St/Pacheco Ave	D	AWSC	AM	-	-	-	-
				PM	12.6	B	12.6	B
33	Pacific Ave & Second Street	D	TWSC	AM	-	-	-	-
				PM	56.8	F	66.3	F
34	Pacific Ave & Front Street (S)	D	TWSC	AM	-	-	-	-
				PM	28.6	D	29.2	D

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.





Turning Movement Legend

Right (R) Through (T) Left (L)	Right (R) Through (T) Left (L)
Left (L) Through (T) Right (R)	Left (L) Through (T) Right (R)



LEGEND

Intersection ID

XX (XX) AM (PM) Volumes

Stop Controlled

Signal

DEFICIENCIES AND IMPROVEMENTS

Standards of Deficiency

The City of Santa Cruz's *Transportation Study Requirements for Development*¹ was referenced to identify standards of deficiency at the study area intersections. The following criteria were used:

The Project traffic added to existing conditions would result in the level of service deteriorating below the City standard and would be more than 3% over existing total volume at the studied intersection. The City's current level of service standard is LOS D.

The Project traffic together with General Plan buildout and updated traffic would result in a drop below the level of service standard for the City of Santa Cruz. (This is defined as a cumulatively considerable effect irrespective of the proportional increase to traffic volumes).

The Project conflicts with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

If the Project site design does not have adequate parking or circulation capacity to accommodate the anticipated demand. (Parking demand shall be measured first using the City Parking requirements but may be adjusted using ITE 85 percentile parking generation rates and shared parking analysis factors at the discretion of the City Engineer and Transportation Manager). The City Parking Ordinance allows reductions, but these must be thoroughly substantiated and quantified in the analysis, and they are not generally all applicable to a Project.

Summary of Deficiencies and Improvements

Existing (2023) Plus Approved Projects Plus Proposed Project Improvement Conditions

As reflected in **Table 10**, the addition of the proposed Project results in the following intersection deficiencies per the City's deficiency standards:

- Intersection #6 – Front Street and Laurel Street
 - o PM Peak Hour: Project causes delay to increase from 41.8 seconds (LOS D) to 65.2 seconds (LOS E) and constitutes more than 3% of the existing total volume
 - o Improvement: City to revise signal timing

No improvements are recommended at the intersection of Front Street and Laurel Street due to the 2023 conditions. It was determined that retiming the signal to account for the updated Project trips is an adequate improvement to improve the LOS at the intersection. **Table 13** provides the LOS for the improvement scenario.

Analysis worksheets have been provided in **Appendix I**.

Table 13 – Existing (2023) Plus Approved Projects Plus Project Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing Plus Approved Projects Plus Project		Existing Plus Approved Projects Plus Project (IMP)		Improvement
					Delay (sec)	LOS	Delay (sec)	LOS	
6	Front St and Laurel St	D	Signal	PM	65.2	E	36.3	D	- City to revise signal timing.

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency.
 Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.

Cumulative (2030) plus Proposed Project Conditions

Project caused deficiencies under Cumulative Conditions are defined as the combination of the 2030 cumulative volumes and the project trips resulting in a drop below Level-of-service D. Typically, the city's Traffic Impact Fee (TIF) program has already identified mitigations for intersections where this drop is anticipated. The project does not cause any intersection to deteriorate below level-of-service D. Although the project is not required to improve the identified intersections, potential improvements were identified for informational purposes. The LOS deficiencies can be grouped into the following categories:

4. Intersection included in TIF and TIF-identified improvement applied
5. Intersection included in TIF but no TIF-identified improvement
6. Intersection not included in TIF

The following study intersection was determined to operate at an unacceptable level of service, are included in the TIF and have an applicable TIF improvement:

- Intersection #13: Ocean Street & Water Street
 - o Revised geometry:
 - Eastbound: 2 EBL, 2 EBT, & 1 EBR
 - Westbound: 1 WBL, 2 WBT, 1 WBR
 - Northbound: 1 NBL, 2 NBT, 1 NBR
 - Southbound: 2 SBL, 2 SBT, 1 SBR
 - o The intersection is anticipated to remain at LOS F with the TIF improvements implemented consistent with the TIF findings.

The following study intersections were determined to operate at an unacceptable level of service, are included in the TIF but do not have a TIF improvement:

- Intersection #6: Front Street & Laurel Street
 - o Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies.
 - o The City may consider the following improvements in a future TIF update:
 - Revise signal to include a northbound right turn overlap phase. The adjacent parcel on the southeast corner of the intersection shall dedicate right of way to accommodate a northbound Class II bike lane.
 - Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
- Intersection #18: Chestnut Street & Laurel Street
 - o Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies.
 - o The City may consider the following improvements in a future TIF update:
 - Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
- Intersection #23: Ocean Street and Soquel Avenue
 - o If left turns from Ocean St are prohibited at Intersection #21 (Ocean Street and Broadway), southbound left turns would need to redirect to perform a southbound turn at Intersection #23 deteriorating intersection operations. It is unclear if the effects of that improvement were reviewed in the TIF.
 - o The City may consider the following improvements in a future TIF update:
 - Revise signal to include a northbound, southbound, and westbound right turn overlap phase. This improvement does not bring intersection operations to LOS D,

but reduces delay. If the parcels adjacent to the right turn lanes redevelop, each shall dedicate right of way to accommodate Class II bike lanes.

The following study intersections were determined to operate at an unacceptable level of service but are not included in the TIF:

- Intersection #33: Pacific Avenue and Second Street
 - o The City may consider adding the intersection and the following improvements in a future TIF update:
 - Convert access to left-in and right-in/right-out. Any vehicles that need to perform a left turn out from Second Street would need to perform a U-turn at the W. Cliff Dr/Center St & Pacific Ave roundabout or perform a westbound left at the Pacific Street & Front Street (S) intersection.
 - An alternative improvement is to install a roundabout or a signal. As shown in **Appendix J** the peak hour signal warrant is met at this intersection; however, a signal may be too close in proximity to the existing roundabouts and may interrupt flows. A full signal warrant should be reviewed during the Cumulative Conditions year (2030) to determine if a signal is warranted at this intersection

Table 14 provides the LOS for the improvement scenario. While feasible improvements were not able to be identified that would reduce the LOS and delay to LOS D at all study intersections, it should be noted that under the City's existing General Plan, the City accepts a lower LOS at some major regional intersections such as this one per Circulation Policy 5.1.2.

Analysis and signal warrant worksheets have been provided in **Appendix J**.

Table 14 – Cumulative (2030) plus Proposed Project plus Potential Improvements Intersection Levels of Service

ID	Study Intersection	Control	Peak Hour	SCDPE				TIF				Post-Improvement		Notes/Improvements	
				Cumulative		Cumulative Plus Project		Intersection?	#	Cumulative					TIF Improvement
				Delay	LOS	Delay	LOS			Delay	LOS				
3	Front Street & Spruce Street	TWSC	PM	39.4	E	-	-	No	-	-	-	-	N/A		- Not studied in TIF. Due to roadway changes with project, no improvements are recommended.
6	Front Street & Laurel Street	Signal	PM	59	E	68	E	Yes	2950	41.8	D	No	47.9	D	- Findings inconsistent with TIF. Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies. - City may consider the following improvements in future TIF update: -- Revise signal to include a northbound right turn overlap phase. The adjacent parcel on the southeast corner of the intersection shall dedicate right of way to accommodate a northbound Class II bike lane.
13	Ocean Street & Water Street	Signal	PM	126	F	129.9	F	Yes	2933	172.7	F	Yes	135.1	F	- TIF Improvement: EB: 2 EBL, 2 EBT, & 1 EBR WB: 1 WBL, 2 WBT, 1 WBR NB: 1 NBL, 2 NBT, 1 NBR SB: 2 SBL, 2 SBT, 1 SBR
18	Chestnut Street & Laurel Street	Signal	PM	83.4	F	90.4	F	Yes	2946	31.9	C	No	TBD		- Findings inconsistent with TIF. Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies. - City may consider the following improvements in future TIF update: -- Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
23	Ocean Street & Soquel Street	Signal	PM	64.3	E	70.5	E	Yes	2957	51.3	D	No	60.9	E	- If left turns from Ocean St are prohibited at Intersection #21 (Ocean Street and Broadway TIF #61) as identified in TIF, SBL turns would need to redirect to perform a SBL turn at Intersection #23 deteriorating intersection operations. It is unclear if the effects of that improvement was reviewed in the TIF because 230 SBL are in the Cumulative volumes table. City to review in future TIF update.
33	Pacific Avenue & Second Street	TWSC	PM	56.8	F	66.3	F	No	-	-	-	-	23.6	C	- Not studied in TIF. - City may consider the following improvements in future TIF update: -- Convert access to left-in and right-in/right-out, or -- Install roundabout or signal control

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.
All findings represent the PM peak hour.
All applicable TIF improvements are included in the Cumulative (2030) Conditions.

VEHICLE MILES TRAVELED (VMT)

VMT analysis for the Project is included in the associated Environmental Impact Report.

OTHER CONSIDERATIONS

Intersection Queuing Evaluation

A queuing study was conducted to evaluate the capacity of the existing turn lanes at the study intersections. Synchro reports were used to conduct the queuing analysis. The 95th percentile vehicle queues were compared against the existing vehicle storage lengths at select intersection movements to determine if the queues are anticipated to exceed their available storage. Results of the queuing evaluation are presented in **Table 15**. Queue lengths are bolded where they exceed the available storage by one car length (25 feet) and are highlighted when the additional project traffic causes the queue to exceed the storage.

The queuing analysis of the 2030 conditions shows that Laurel Street continues to be a congested corridor with the addition of development traffic. The queue lengths should be used in designing the intersections within the project area. Consideration should be given to the queues that spill-back between intersections or block transit access to the transit center on Front Street. Modifications may be required to the typical sections proposed in the plan to accommodate the queuing along the corridor.

It is recommended that a future TIF update consider the following improvements to reduce queuing on Laurel Street:

- Laurel Street between Chestnut Street and San Lorenzo Boulevard - Signal timing coordination modifications
- Intersection #5: Pacific Avenue & Laurel Street
 - o Remove eastbound and westbound left turn pockets and restrict left turns.
 - o Add second eastbound through lane

Analysis sheets that include the anticipated vehicle queues for Cumulative (2030) Conditions and Cumulative (2030) Plus Project Conditions are presented in **Appendix G** and **Appendix K**, respectively.

Table 15 – Intersection Queuing Evaluation Results

Intersection/Analysis Scenario	MVMТ	Cumulative 2030 PM Peak Hour		Cumulative 2030 Plus Proposed Project PM Peak Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
1 Front Street (N) & Pacific Avenue	EB	50	7	-	122
	WB	-	0	-	20
	SB	-	28	-	8
2 Pacific Ave & Spruce St	Cumulative Geometry				
	EBL/T/R	-	4	-	-
	WBL/T/R	-	4	-	-
	NBL/T/R	-	1	-	-
	SBL/T/R	-	2	-	-
	Cumulative Plus Project Geometry				
	EBL/R	-	-	-	3
	NBL/T	-	-	-	1
	SBT/R	-	-	-	0
3 Front St & Spruce St	EBL/T/R	-	43	Intersection Does Not Exist	
	WBL/T/R	-	9		
	NBL/T/R	-	1		
	SBL/T/R	-	5		
4 Cedar St & Laurel St	EBL	150	11	150	13
	NBR	-	9	-	11
	SBR	-	45	-	54
5 Pacific Ave & Laurel St	EBL	100	#256	100	#258
	EBT	-	#1145	-	#1274
	WBL	50	96	50	#141
	WBT	-	#945	-	#1026
	WBR	50	37	-	29
	NBL	50	84	50	112
	NBT	-	145	-	156
	SBL	50	128	-	137
	SBT	-	118	-	117
6 Front St & Laurel St	EBL	100	#289	100	#331
	EBT	-	530	-	567
	WBL	300	m#285	300	m#511
	WBT	-	#1083	-	#1150
	WBR	-	m91	-	m90
	NBL	100	17	100	56
	NBT	-	277	-	309
	NBR	50	196	50	291
	SBL	100	#304	100	#304
	SBT	-	403	-	452
	SBR	100	177	100	195
7 Laurel St Extension & 3rd St	EBT/R	-	25	-	25
	WBT/L	-	25	-	25
	NBL/T/R	-	25	-	25
	SBL/T	-	25	-	25
	SBR	50	25	50	25
8 Front St & Laurel St Extension	WBL/R			-	23

Intersection/Analysis Scenario	MVM T	Cumulative 2030 PM Peak Hour		Cumulative 2030 Plus Proposed Project PM Peak Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
	NBT/R	Intersection Does Not Exist		-	0
	SBT/L			-	11
9 W. Cliff Dr/Center St & Pacific Ave	WB	-	213	-	205
	NB	-	82	-	83
	SB	-	145	-	145
10 Center St & Mission St	EBT	-	#632	-	#632
	WBL	75	m68	75	m69
	WBT	-	m8	-	m8
	NBL	-	146	-	146
	NBR	-	143	-	143
11 Front St/Pacific Ave & Mission St	EBL	75	m53	75	m53
	EBT	-	m140	-	m141
	WBL	180	112	180	112
	WBT	-	527	-	527
	SBT	-	#692	-	#715
	SBR	-	119	-	124
12 River St & Water St	EBL	100	#106	100	#106
	EBT	-	#474	-	#476
	EBR	100	0	100	0
	WBL	250	#250	250	#291
	WBT	-	304	-	306
	WBR	-	52	-	52
	NBL	70	#155	70	#155
	NBT	-	154	-	157
	NBR	100	110	100	128
	SBL	150	#341	150	#341
	SBT	-	#455	-	#455
13 Ocean St & Water St	EBL	200	#343	200	#367
	EBT	-	#1061	-	#1062
	EBR	100	114	100	114
	WBL	200	#347	200	#347
	WBT	-	#632	-	#634
	WBR	100	297	100	297
	NBL	150	#403	150	#403
	NBT	-	#895	-	#920
	NBR	80	37	80	43
	SBL	200	#432	200	#432
	SBT	-	#932	-	#957
	SBR	200	266	200	297
14 Ocean St & Washburn Ave	EBT	-	62	-	63
	WBT	-	59	-	64
	WBR	50	17	50	17
	NBL	100	52	100	52
	NBT	-	361	-	384
	NBR	60	11	60	13
	SBL	100	68	100	68
	SBT	-	410	-	444
	SBR	60	0	60	0

Intersection/Analysis Scenario	MVMТ	Cumulative 2030 PM Peak Hour		Cumulative 2030 Plus Proposed Project PM Peak Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
15 Ocean St & Plymouth St	EBT	-	#220	-	#220
	EBR	120	#155	120	#173
	WBL	80	#145	80	#145
	WBT	-	88	-	88
	NBL	120	#331	120	#331
	NBT	-	148	-	158
	SBL	120	131	120	131
	SBT		#462	-	#485
16 SR 1/Mission St & Laurel St	EBL	150	#101	150	#101
	EBT	-	#1525	-	#1573
	EBR	150	325	150	328
	WBL	200	#173	200	#206
	WBT	-	#1181	-	#1220
	NBL	50	#771	50	#771
	NBT	-	328	-	347
	SBL	50	70	50	70
17 California St & Laurel St	SBT	-	#570	-	#570
	EBL	50	23	50	23
	EBT	-	#684	-	#761
	WBL	50	#199	50	#211
	WBT	-	458	-	513
	NBT	-	#224	-	#235
	NBR	100	127	100	147
	SBT	-	182	-	184
18 Chestnut St & Laurel St	EBL	100	#156	100	#156
	EBT	-	#807	-	#893
	EBR	100	30	100	30
	WBL	100	m68	100	m63
	WBT	-	#694	-	#765
	NBT	-	173	-	174
	NBR	50	45	50	45
	SBT	-	86	-	91
19 Center St & Laurel St	SBR	50	33	50	33
	EBL	60	m25	60	m23
	EBT	-	m#778	-	m#788
	WBL	60	#94	60	#112
	WBT	-	#577	-	#711
	NBL	60	65	60	71
	NBT	-	111	-	120
	SBL	60	126	60	127
20 San Lorenzo Blvd & Laurel St	SBT	-	92	-	99
	WBL	-	#324	-	#346
	WBR	25	22	25	23
	NBT	-	#692	-	#871
	NBR	-	378	-	m373
21 Ocean St & Broadway	SBT	-	129	-	152
	EBL	200	#258	200	#292
	EBT	-	390	-	404
	WBL	100	#126	100	#126
	WBT	-	#488	-	#512

Intersection/Analysis Scenario	MVMТ	Cumulative 2030 PM Peak Hour		Cumulative 2030 Plus Proposed Project PM Peak Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
22 Riverside Ave & Soquel Ave	NBT	-	163	-	163
	NBR	100	23	100	23
	SBT	-	#341	-	#401
	EBT	-	198	-	202
	WBT	-	162	-	175
	NBT	-	32	-	47
	SBT	-	27	-	27
23 Ocean St & Soquel Ave	EBL	100	m#344	100	m#365
	EBT	-	#370	-	#407
	WBL	25	#251	25	#357
	WBT	-	192	-	201
	WBR	25	37	25	37
	NBL	100	292	100	292
	NBT	-	#442	-	#454
	NBR	100	#306	100	#320
	SBL	200	#544	200	#544
	SBT	-	228	-	236
	SBR	100	114	100	121
24 Branciforte Ave & Soquel Ave	EBL	150	112	150	112
	EBT	-	224	-	241
	WBL	150	79	150	79
	WBT	-	#434	-	#516
	NBT	-	#231	-	#231
	SBT	-	#185	-	#185
	SBR	-	37	-	37
25 Seabright Ave & Soquel Ave	EBL	50	#57	50	#57
	EBT	-	#506	-	#544
	WBL	100	#244	100	#244
	WBT	-	434	-	#522
	NBT	-	#302	-	#302
	NBR	100	92	100	92
	SBT	-	#229	-	#229
	SBR	100	0	100	0
26 Morrissey Blvd/Water St & Soquel Ave	EBL	-	#238	-	#255
	EBT	-	#647	-	#665
	WBL	50	m#76	50	m#74
	WBT	-	#644	-	#666
	NBL	50	25	50	25
	NBT	-	112	-	112
	SBL	-	#303	-	#303
	SBT	-	172	-	172
	SBR	-	16	-	36
27 Frederick St & Soquel Ave	EBT	-	#714	-	#731
	WBL	100	m#253	100	m#246
	WBT	-	338	-	350
	NBL	-	126	-	126
	NBR	100	301	100	302

Intersection/Analysis Scenario	MVMТ	Cumulative 2030 PM Peak Hour		Cumulative 2030 Plus Proposed Project PM Peak Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
28 Trevethan Ave/Hagemann Ave & Soquel Ave	EBL	100	m44	100	m49
	EBT	-	m247	-	m245
	WBL	100	m22	100	m22
	WBT	-	150	-	152
	NBT	-	114	-	115
	SBT	-	134	-	139
29 Park Way & Soquel Ave	EBL	100	m28	100	m28
	EBT	-	#801	-	#814
	WBL	150	24	150	24
	WBT	-	327	-	337
	NBT	-	85	-	85
	SBT	-	#207	-	#207
30 Capitola Road & Soquel Ave	EBL	100	46	100	46
	EBT	-	360	-	367
	EBR	100	#1098	100	#1113
	WBL	200	#183	200	#183
	WBT	-	252	-	261
	NBL	-	#476	-	#482
	NBT	-	#480	-	#486
	NBR	100	43	100	43
	SBT	-	112	-	112
31 Morrissey Blvd & Fairmount Ave /SR-1 SB On-Ramp	SBR	-	0	-	0
	EBT	-	#333	-	#333
	EBR	-	23	-	23
	WBT	-	56	-	56
	WBR	100	3	100	3
	NBL	100	60	100	60
	NBT	-	#356	-	#372
	SBL	150	60	150	60
32 Morrissey Blvd & SR-1 NB Ramps /Rooney St/Pacheco Ave	SBT	-	#455	-	#475
	EBL/T	-	75	-	75
	EBR	25	25	25	25
	WBL/T	-	25	-	25
	WBR	50	0	50	0
	NBL/T/R	-	75	-	75
33 Pacific Ave & Second St	SBL/T/R	-	25	-	25
	WBL	-	99	-	109
	WBR	-	18	-	20
	NBT/R	-	0	-	0
34 Pacific Ave & Front St (S)	SBT/L	-	3	-	55
	WBL/R	-	48	-	50

Notes

1. Queues based Synchro queue outputs for Signals and HCM 6 Edition queuing for SSSC and AWSC intersections.
2. m - Volume for 95th percentile queue is metered by upstream signal.
3. # - 95th percentile volume exceeds capacity; queue may be longer.
4. Bold represents unacceptable operations. Shaded represents a Project induced deficiency.

Laurel Street Extension Access Control

An alternative analysis was completed to evaluate the feasibility of access control on the Laurel Street Extension between the new roadway south of Block D and 3rd Street. This short segment is currently a one-way street in the southbound direction and experiences minimal traffic. In the summer it is used for restricted access by residents and employees of the Boardwalk to provide relief for the adjacent congested roadways.

Concept of Operations

Access control on the Laurel Street Extension would require a gate or traffic signal on the inbound approach to Laurel Street Extension. Local traffic will have access to this roadway and be allowed through the gate or traffic signal. Currently the Laurel Street Extension is one-way in the southbound direction. Therefore, a gate would be installed at the north end of this segment of the Laurel Street Extension near the new roadway south of Block D. The roadway south of Block D is approximately 500 feet in length. This roadway would be needed for queue storage for vehicles waiting to access the gate. Depending on the technology used for the gate (i.e. insertion card, proximity card, automatic vehicle ID, or security code access, etc.) the service times for the gate may vary between 10 to 15 seconds. Therefore, depending on the arrival rate of vehicles, a vehicle queue may form. There is approximately 500 feet, or 20 vehicles of storage assuming 25 feet per vehicle, before the queue would extend onto Front Street. Based on a micro-simulation model using a Microsoft Excel spreadsheet with macros, a queuing analysis was performed to estimate the vehicle queue based on the expected vehicle demands at the gate and the service times of the gate. Within the model, vehicle arrivals followed a Poisson distribution and a range of service rates were randomly assigned to each vehicle. Service times represent the variation in time for a vehicle to travel through the gate upon arrival. The range of service time was assumed to be 10 to 15 seconds per vehicle. After running 1,000 simulations for each scenario and time period, it was determined that the 95th percentile queue for the Cumulative plus Project scenario (highest volume of all scenarios) was estimated to be 5 vehicles. Therefore, the 500 feet of storage length along the roadway south of Block D should accommodate the estimated vehicle queues for the gate. In addition, a sensitivity analysis was completed to determine the maximum volume demand the gate could serve and still accommodate 500 feet of vehicle queues. This analysis resulted in a maximum throughput of approximately 225 vehicles per hour. See queuing analysis findings in Appendix M. The new roadway south of Block D would also need to provide a turnaround in the instance a vehicle needs to turn around that does not have access through the gate.

If the Laurel Street Extension were to be considered for northbound traffic, then a gate would be needed at the southern end of the Laurel Street Extension at 3rd Street. Based on the existing roadway geometry at this intersection, there is minimal vehicle storage for vehicle queues at the gate. There is approximately 50 feet at the southbound approach at this intersection. If the traffic flow were reversed for northbound only traffic, the 50 feet could be used for storage. However, this would only provide sufficient queue storage for two vehicles, assuming 25 feet per vehicle. If the queue were to extend beyond this storage, it would result in vehicles blocking the intersection of Laurel Street Extension and 3rd Street. Each approach to this intersection has a shared left turn/through/right turn lane. Therefore, if there were vehicles waiting to turn into the new northbound Laurel Street Extension, these vehicles would block through traffic on 3rd Street. Therefore, a northbound access controlled Laurel Street Extension is likely infeasible.

Similar to the northbound Laurel Street Extension concept, a single-lane two-way traffic flowing Laurel Street Extension concept would likely be infeasible. The vehicle queuing that would result from a northbound flow of traffic, and particularly if these vehicles need to wait for southbound traffic to clear, would result in the intersection of Laurel Street Extension and 3rd Street being blocked.

Gates to neighborhood and for access control are common and can include steel swing gates, similar to those found at gated communities or boom arms found at parking structures. Bollards that retract underground is another technology. Each of these will require remote control access and management, as well as traffic signs that will warn road users of the closure. In emergencies, or for evacuation purposes, the gates should remain open for all road users.

Traffic Analysis

To determine the potential traffic effects of an access controlled southbound Laurel Street Extension (i.e. the most feasible of the concepts described above), the intersection LOS at adjacent intersections were evaluated with the potential reassignment of cut-through vehicles using the Laurel Street Extension.

Volume Reassignment

With the access control of the Laurel Street Extension, the volumes were reassigned to the adjacent roadway network for the each Plus Project scenario. Using a conservative methodology, all the southbound approach volumes at the intersection of Laurel Street Extension and 3rd Street were reassigned. This assumes that all traffic on the segment is cut-through traffic. Although is unlikely to be all cut-through traffic, this reassignment would show the maximum number of vehicles assigned to other intersections. Overall, baseline volumes were rerouted from using Front Street and the Laurel Street Extension to using Center Street and Second Street if coming from the West and using Ocean Street, Barson Street, and Riverside Avenue if coming from the east. Overall, this reassignment resulted in a decrease in vehicles within the Downtown Expansion Area and an increase in volumes along Center Street, Ocean Street, and Riverside Avenue.

Existing (2023) plus Approved Projects Plus Project Plus Laurel Access Control Intersection Level of Service

Existing (2023) plus Approved Projects Plus Project Plus Laurel Access Control peak-hour traffic volumes were evaluated for the AM and PM peak-hours. Analysis worksheets for the scenario are included in **Appendix M**.

Intersections

Table 15 presents the intersection operating conditions for this analysis scenario. As indicated in **Table 15**, the intersection level of service improved or remained the same at each study intersection evaluated in the Existing (2023) plus Approved Projects Plus Project Plus Laurel Access Control scenario. The reason for this is because this scenario only evaluated the intersections near the Downtown Expansion Area, which all experienced reduced volumes. However, even with the reduction in volumes, the following study intersection was determined to operate at an unacceptable level of service:

- Intersection #6: Front Street & Laurel Street
 - This intersection operated at LOS E with 76.5 seconds of delay with the Project, but without the Laurel Access Control in the AM peak hour. The Laurel Access Control resulted in a decrease in delay to 59.7 seconds, but this remains at LOS E. In the PM peak hour, the Laurel Access Control results in the intersection improving from LOS E, with 65.2 seconds of delay, to LOS D, with 49.5 seconds of delay.
 - Improvement: City to revise signal timing

Therefore, with the Laurel Access Control, in the Existing (2023) plus Approved Projects Plus Project Plus Laurel Access Control scenario, there are no new LOS deficiencies identified.

Cumulative Plus Project Plus Laurel Access Control Intersection Level of Service

Cumulative Plus Project Plus Laurel Access Control peak-hour traffic volumes were evaluated for the PM peak-hour only. Analysis worksheets for the scenario are included in **Appendix M**.

Intersections

Table 17 presents the intersection operating conditions for this analysis scenario. As indicated in **Table 17**, the intersection level of service did not worsen at any study intersection in the Cumulative Plus Project Plus Laurel Access Control scenario. Similar to Existing (2023) plus Approved Projects Plus Project Plus Laurel Access Control scenario, the intersections near the Downtown Expansion Area all experienced reduced volumes. For the intersections along Center Street and Ocean Street, the increases in delay were minimal and did not result in a worse LOS. However, it should be noted that intersections that previously operated at an unacceptable level of service, still remained.

Therefore, with the Laurel Access Control, in the Cumulative Plus Project Plus Laurel Access Control scenario, there are no new LOS deficiencies identified.

Access Control Findings

Access control through Laurel Street Extension is a tool currently used to manage peak summer traffic in the area. The results of the analysis above show that there is sufficient queuing capacity and a small potential for intersection operation improvements with the implementation of southbound access control on Laurel Street Extension. The queuing analysis showed that providing northbound access on the roadway is not feasible with the available storage on 3rd Street.

Table 16 – Existing (2023) Plus Approved Projects Plus Proposed Project Plus Laurel Access Control
Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Existing Plus Approved Projects		Existing Plus Approved Projects Plus Project		Existing Plus Approved Projects Plus Project Plus Laurel Access Control	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC/RAB	AM	11.4	B	0.30	-	0.30	-
				PM	14.4	B	0.43	-	0.43	-
2	Pacific Ave and Spruce St	D	TWSC	AM	10.2	B	9.8	A	9.8	A
				PM	11.0	B	10.1	B	10.1	B
3	Front St and Spruce St	D	TWSC	AM	15.5	C	Intersection Does Not Exist		Intersection Does Not Exist	
				PM	27.4	D				
4	Cedar St and Laurel St	D	TWSC	AM	11.7	B	12.7	B	12.7	B
				PM	12.3	B	12.8	B	12.8	B
5	Pacific Ave and Laurel St	D	Signal	AM	17.7	B	19.0	B	18.7	B
				PM	21.4	C	22.4	C	21.7	C
6	Front St and Laurel St	D	Signal	AM	60.6	E	76.5	E	59.7	E
				PM	41.8	D	65.2	E	49.5	D
7	Laurel St Extension and 3rd St	D	AWSC	AM	8.0	A	8.2	A	7.9	A
				PM	8.4	A	8.4	A	8.1	A
8	Front St and Laurel St Extension	D	AWSC	AM	Intersection Does Not Exist		13.2	B	12.7	B
				PM			16.1	C	14.6	B

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.

Table 17 – Cumulative (2030) Plus Project Plus Laurel Access Control Intersection Levels of Service

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative (2030) Conditions		Cumulative (2030) Plus Project Conditions		Cumulative (2030) Plus Project Conditions Plus Laurel Access Control	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
1	Front Street (N) & Pacific Avenue	D	TWSC	AM	-	-	-	-	-	-
				PM	18.4	C	0.55	-	0.55	-
2	Pacific Ave & Spruce St	D	TWSC	AM	-	-	-	-	-	-
				PM	12.1	B	10.7	B	10.7	B
3	Front St & Spruce St	D	TWSC	AM	-	-	Intersection Does Not Exist		Intersection Does Not Exist	
				PM	39.4	E				
4	Cedar St & Laurel St	D	TWSC	AM	-	-	-	-	-	-
				PM	24.0	C	26.8	D	26.8	D
5	Pacific Ave & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	39.4	D	48.2	D	53.5	D
6	Front St & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	59.0	E	68.0	E	63.7	E
7	Laurel St Extension & 3rd St	D	AWSC	AM	-	-	-	-	-	-
				PM	8.3	A	8.3	A	8.0	A
8	Front St & Laurel St Extension	D	TWSC	AM	Intersection Does Not Exist		-	-	-	-
				PM			20.1	C	17.0	C
9	W. Cliff Dr/Center St & Pacific Ave	D	RAB	AM	-	-	-	-	-	-
				PM	0.68	-	0.68	-	0.70	-
10	Center St & Mission St	D	Signal	AM	-	-	-	-	-	-
				PM	51.2	D	51.2	D	51.2	D
11	Front St/Pacific Ave & Mission St	D	Signal	AM	-	-	-	-	-	-
				PM	49.1	D	50.8	D	50.8	D
12	River St & Water St	D	Signal	AM	-	-	-	-	-	-
				PM	42.1	D	44.6	D	44.6	D
13	Ocean St & Water St	D	Signal	AM	-	-	-	-	-	-
				PM	126.0	F	129.9	F	129.9	F
14	Ocean St & Washburn Ave	D	Signal	AM	-	-	-	-	-	-
				PM	22.9	C	23.9	C	23.9	C
15	Ocean St & Plymouth St	D	Signal	AM	-	-	-	-	-	-
				PM	26.7	C	27.8	C	27.8	C
16	SR 1/Mission St & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	51.5	D	52.0	D	52.0	D
17	California St & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	31.4	C	37.6	D	37.6	D
18	Chestnut St & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	83.4	F	90.4	F	90.4	F
19	Center St & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	28.8	C	36.1	D	36.8	D
20	San Lorenzo Blvd & Laurel St	D	Signal	AM	-	-	-	-	-	-
				PM	17.6	B	22.1	C	23.4	C
21	Ocean St & Broadway	D	Signal	AM	-	-	-	-	-	-
				PM	35.2	D	38.9	D	38.3	D
22	Riverside Ave & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	12.7	B	12.8	B	12.8	B
23	Ocean St & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	64.3	E	70.5	E	70.5	E
24	Branciforte Ave & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	25.6	C	31.4	C	31.4	C

ID	Intersection	LOS Threshold	Control	Peak Hour	Cumulative (2030) Conditions		Cumulative (2030) Plus Project Conditionserr		Cumulative (2030) Plus Project Conditions Plus Laurel Access Control	
					Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS	Delay (sec) or V/C	LOS
25	Seabright Ave & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	48.3	D	50.6	D	50.6	D
26	Morrissey Blvd/Water St & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	44.6	D	50.5	D	50.5	D
27	Frederick St & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	25.3	C	26.6	C	26.6	C
28	Treveltham Ave/Hagemann Ave & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	5.8	A	5.8	A	5.8	A
29	Park Way & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	18.9	B	19.2	B	19.2	B
30	Capitola Road & Soquel Ave	D	Signal	AM	-	-	-	-	-	-
				PM	43.5	D	43.8	D	43.8	D
31	Morrissey Blvd & Fairmount Ave/SR-1 SB On-Ramp	D	Signal	AM	-	-	-	-	-	-
				PM	37.0	D	41.5	D	41.5	D
32	Morrissey Blvd & SR-1 NB Ramps/ Rooney St/Pacheco Ave	D	AWSC	AM	-	-	-	-	-	-
				PM	12.6	B	12.6	B	12.6	B
33	Pacific Ave & Second Street	D	TWSC	AM	-	-	-	-	-	-
				PM	56.8	F	66.3	F	81.4	F
34	Pacific Ave & Front Street (S)	D	TWSC	AM	-	-	-	-	-	-
				PM	28.6	D	29.2	D	29.2	D

Notes: Bold represents unacceptable operations. Shaded represents a Project induced deficiency. Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst approach's delay.

Parking Evaluation

The City of Santa Cruz Municipal Code 24.12.240 provides the number of parking spaces required for all land uses. However as noted in Municipal Code 24.12.220, development within ½-mile of a major transit stop is excepted from the above requirements as outlined in California Government Code Section 65863.2(b). The project could require the arena to provide some amount of employee parking per 65863.2(d), and will work with the applicant during the development review process to determine an adequate amount of employee parking to meet Arena and City needs and in compliance with State Law.). In totality, the commercial and residential portions of the Project are assumed to have no minimum parking requirements per state law based on its proximity to high-quality transit corridors as defined in California Public Resources Code Section 21155.

A parking analysis was conducted per the City's TIA guidelines for informational purposes. It's expected that this information can be used to inform future parking policy in the expansion area and in the downtown.

The Project is expected to provide both on-street and off-street parking. Off-street parking will be located in garages within the project site for residential parking demand. Commercial and retail development is estimated to park on-street or in existing Downtown parking garages. Preliminary architectural development scenarios estimate providing a total off-street parking supply of 1,020 spaces by providing parking on the first floor and basement level of each proposed building within the Downtown Expansion Area. This total assumes 850 parking spaces for residential use and 170 parking spaces within the basement level of the arena. This yields between 0.47 and 0.80 parking spaces per residential unit based on the development scenario. Market rate housing development citywide is providing about 0.85 stalls per unit while affordable housing developments provide fewer or none. Each developer will individually decide how much parking to provide, but it is anticipated that they will elect to provide a minimum amount of parking for marketability, even though there are no minimum parking requirements per state law.

On-street parking is incorporated into the proposed Front Street, Pacific Avenue and Center Street roadway cross sections and is planned to be utilized by the proposed ground floor retail and restaurants. Based on the length of street redevelopment within the Project area and an estimate of usable space for parking (excluding driveways, red curb zones, etc.), it is estimated that the total on-street parking supply will be approximately 225 spaces.

A parking analysis was conducted for the following two development scenarios to provide a range of potential parking demand based on the expected low and high ranges of residential development. The two development scenarios were divided into the following eight scenarios based on day of the week and arena use:

1. 1,060 dwelling units with 60,400 square feet of commercial (3.5 FAR)
 - a. Friday with no arena event
 - b. Saturday with no arena event
 - c. Friday with arena event
 - d. Saturday with arena event
2. 1,800 dwelling units with 60,000 square feet of commercial (matching LOS analysis assumptions)
 - a. Friday with no arena event
 - b. Saturday with no arena event
 - c. Friday with arena event
 - d. Saturday with arena event

Based on the proposed land use plan, the parking demand for the Project was divided into three categories:

- Residential
- Retail and restaurant
- Arena

The parking demand was calculated by land use by block by hour and any demand exceeding the off- or on-street parking supply was allocated to existing Downtown parking garages, although the Project is not anticipated to join the Downtown Santa Cruz Parking District (Parking District No. 1). The City of Santa Cruz provided existing parking data at three of its Downtown parking garages (Locust, River Front and Soquel/Front) for select days in November 2024 with and without Santa Cruz Warriors games. The excess parking demand was added to the applicable existing parking garage counts.

The residential parking demand was calculated using the rates in the Institute of Transportation Engineers' *Parking Generation Manual, 6th Edition*. If for a particular hour the residential parking demand exceeded that block's parking capacity, the excess parking demand was evenly allocated to each of the existing Downtown parking garages. The same approach was undertaken for the retail/restaurant parking demand so that collectively, if for all Project blocks the retail/restaurant demand exceeded the total on-street parking capacity within the Project area, the excess demand was evenly allocated to each of the existing Downtown parking garages.

The arena parking demand was calculated using the projected average number of attendees and employees for the projected most attended type of event (e.g. concert) with an estimated 100% vehicle mode share and vehicle occupancy of 2.5 persons per vehicle, and assumed people arrived two hours before and left two hours after the event. This results in an estimated 3,502 attendees and employees for concert at the new arena. The average existing attendance, including employees, at a Santa Cruz Warriors game is 2,206. Since existing Downtown parking garage data was available on days with Warriors games, the proposed arena parking demand was calculated using the attendance difference between a future concert event (3,502) and an existing Warriors game (2,206). For analysis scenarios that included an arena event, the parking demand in excess of the proposed 170 spaces below the arena was evenly allocated to each of the existing Downtown parking garages. Parking for the new arena is planned to function similar as it does with the existing arena with a majority of the parking demand accommodated by existing Downtown parking garages.

The findings of the parking analysis found, shown in **Table 18**, that the existing Downtown parking garages can accommodate the excess parking demand from the Project area for all day of week and event scenarios for Development Scenario 1 with 1,060 dwelling units. As the number of dwelling units increases to 1,800 for Development Scenario 2, the only scenario that could accommodate the existing plus Project parking demand was Saturday with no arena event. Therefore, under the most conservative parking demand scenario, Development Scenario 2 Friday with an arena event, the parking demand is 1,353 spaces which results in an approximately 551 space deficiency.

This parking analysis is based on ITE's Parking Generation demand rates that do not account for the 22% mode share reduction used in the LOS analysis. If the 22% mode share reduction is applied to the commercial uses, it is anticipated that the parking deficiency in the most conservative scenario would be approximately 455 spaces. Additional capacity could be found in the Downtown's approximately 800 on-street parking stalls or other garages and surface lots Detailed parking analysis data is included in **Appendix N**.

Table 18 - Parking Analysis Summary

Development Scenario		DU	Day	Event?	Adequate Capacity in Existing Garages at Peak Demand?
1	A	1,060	Friday	No	Yes
	B		Saturday	No	Yes
	C		Friday	Yes	Yes
	D		Saturday	Yes	Yes
2	A	1,800	Friday	No	No
	B		Saturday	No	Yes
	C		Friday	Yes	No
	D		Saturday	Yes	No

During the entitlement phase of the Project, it is recommended to review the proposed dwelling unit count, parking provided, and parking capacity. The existing Downtown parking garages are estimated to reach capacity at 1,373 dwelling units with the conservative assumptions above. As the development increases over 1,373 dwelling units the City can evaluate if additional parking supply is needed in the Downtown. In the meantime, travel demand management techniques can be used to reduce the amount of parking needed.

Travel Demand Management

It is recommended that the Project implement some of the following travel demand management (TDM) strategies, per the City of Santa Cruz's *SB 743 Implementation Guidelines* dated May 12, 2022, to reduce the residential and commercial parking demand as well as affects on intersection operations.

With the project outside the parking district, the City's Go Santa Cruz travel demand management program is not funded for these areas. Each project will need to incorporate their own TDM strategies and/or the City will need to consider the feasibility of expanding the parking district.

1. TDM Measure # 18 – Bike share: Accommodate bike share stations and/or consider passes for employees and residents
2. TDM Measure # 19 – Implement/Improve On-Street Bicycle Facility: Implements or provides funding for improvements to corridors and crossings for bike networks identified within a one-half mile buffer area of the project boundary, to support safe and comfortable bicycle travel.
3. TDM Measure # 20 – Include Bike Parking In Excess Of City Code: Implements long-term bicycle parking to support safe and comfortable bicycle travel by providing parking facilities at destinations
4. TDM Measure # 21 – Include Secure Bike Parking And Showers In Excess Of City Code: Implements additional end-of-trip bicycle facilities to support safe and comfortable bicycle travel.
5. TDM Measure # 22 – Bicycle Repair Station/Services: On-site bicycle repair tools and space to use them supports on-going use of bicycles for transportation.
6. TDM Measure # 27 - Reduce Parking Supply
7. TDM Measure # 28 – Unbundle Parking: Unbundles parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost. Implementation of residential permit parking zones for long-term use of on-street parking in residential area at the expense to the developer.

8. TDM Measure # 29 – Parking Cash-Out: Provide employees a choice of forgoing current parking for a cash payment to be determined by the employer. The higher the cash payment, the higher the reduction.
9. TDM Measure # 30 – Residential Area Parking Permits: Institute residential area parking permit areas in and/or near the Project area to reduce intrusion into existing nearby residential areas.
10. TDM Measure # 31 – Parking Management Strategies: Strategies to encourage efficiency in parking facilities and improve the quality of service to parking users

In order to reduce parking demand during arena events some additional TDM measures need to be considered as compared to residential and commercial uses. It is recommended to consider the following TDM measures from the City guidelines for the arena:

1. TDM Measure # 2 – Safe And Well-Lit Access To Transit: Enhance the route for people walking or bicycling to nearby transit stops and the Pacific Station Metro Bus Center. Provide Emergency 911 phones along these routes to enhance safety.
2. TDM Measure # 3 – Implement Neighborhood Shuttle: Implement shuttle between the Downtown parking garages and the arena to run before and after arena events.
3. TDM Measure # 4 – Transit Subsidies: Provide free or discounted Santa Cruz Metro transit tickets for all attendees and employees.
4. TDM Measure # 5 – Mandatory Travel Behavior Change Program: Provide a web site that allows employees to research other modes of transportation for commuting. Employee-focused travel behavior change program that targets individuals' attitudes, goals, and travel behaviors, educating participants on the impacts of their travel choices and the opportunities to alter their habits.
5. TDM Measure # 6 – Promotions & Marketing: Involves the use of marketing and promotional tools to educate and inform travelers about site-specific transportation options and the effects of their travel choices with passive educational and promotional materials. Marketing and public information campaign to promote awareness of TDM program with an on-site coordinator to monitor program.
6. TDM Measure #9 - Passenger Loading Zones For Carpool/Vanpool: Provide loading zones for carpool, vanpool, shuttles, taxis and transportation network companies (TNCs) (e.g. Lyft, Uber, etc.) near the arena entrance.
7. TMD Measures #18-22: bicycle infrastructure strategies as described above

CONCLUSIONS

The project is expected to generate the following new trips to the network:

- In the 'Existing Plus Approved Projects' Condition, the proposed Project is estimated to generate 6,307 new daily trips with 544 new trips occurring during the AM peak-hour and 442 new trips occurring during the PM peak hour during
- For the '2030 Cumulative' conditions trip generation, a credit for the existing multifamily capacity of 1,116 units was applied since these trips were already accounted for in the City of Santa Cruz General Plan. This results in a total of 684 proposed multi-family housing units that were not previously included in the City of Santa Cruz General Plan.
- In the '2030 Cumulative' condition the proposed Project is estimated to generate 2,357 new daily trips with 246 new trips occurring during the AM peak-hour and 119 new trips occurring during the PM peak-hour.

The operational analysis shows that:

For the 'Existing Plus Approved Projects Plus Proposed Project' condition, the addition of the proposed Project results in one intersection deficiency at the Front Street intersection with Laurel Street (Intersection #6) as defined by the City of Santa Cruz *Transportation Study Requirements*. It was determined that if the signal timing is revised, the delay will be reduced as indicated below:

- o AM Peak Hour:
 - Existing Plus Approved Projects Plus Project – 76.5 seconds of delay (LOS E)
 - Existing Plus Approved Projects Plus Project (Improvement) – 41.2 seconds of delay (LOS D)
- o PM Peak Hour: **Project Induced Deficiency**
 - Existing Plus Approved Projects Plus Project – 65.2 seconds of delay (LOS E)
 - Existing Plus Approved Projects Plus Project (Improvement) – 36.3 seconds of delay (LOS D)

For the 'Cumulative Plus Proposed Project' condition, the project does not cause any intersection to deteriorate below level-of-service D. Although the project is not required to improve the identified intersections, potential improvements were identified for informational purposes. The LOS deficiencies can be grouped into the following categories:

- Intersection included in TIF and TIF-identified improvement applied
- Intersection included in TIF but no TIF-identified improvement
- Intersection not included in TIF

The following study intersections were determined to operate at an unacceptable level of service, are included in the TIF and have an applicable TIF improvement:

- Intersection #13: Ocean Street & Water Street
 - o The intersection is anticipated to remain at LOS F with the TIF improvements implemented consistent with the TIF findings.

The following study intersections were determined to operate at an unacceptable level of service, are included in the TIF but do not have a TIF improvement:

- Intersection #6: Front Street & Laurel Street

- o Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies.
- o The City may consider the following improvements in a future TIF update:
 - Revise signal to include a northbound right turn overlap phase. The adjacent parcel on the southeast corner of the intersection shall dedicate right of way to accommodate a northbound Class II bike lane.
 - Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
- Intersection #18: Chestnut Street & Laurel Street
 - o Delay discrepancy is estimated to derive from analytical differences between HCM 2000 and HCM 6th Edition methodologies.
 - o The City may consider the following improvements in a future TIF update:
 - Signal timing coordination modifications between Chestnut Street and San Lorenzo Boulevard
- Intersection #23: Ocean Street and Soquel Avenue
 - o If left turns from Ocean St are prohibited at Intersection #21 (Ocean Street and Broadway), southbound left turns would need to redirect to perform a southbound turn at Intersection #23 deteriorating intersection operations. It is unclear if the effects of that improvement were reviewed in the TIF.
 - o The City may consider the following improvements in a future TIF update:
 - Revise signal to include a northbound, southbound, and westbound right turn overlap phase. This improvement does not bring intersection operations to LOS D, but reduces delay. If the parcels adjacent to the right turn lanes redevelop, each shall dedicate right of way to accommodate Class II bike lanes.

The following study intersections were determined to operate at an unacceptable level of service but are not included in the TIF:

- Intersection #33: Pacific Avenue and Second Street
 - o The City may consider adding the intersection and the following improvements in a future TIF update:
 - Convert access to left-in and right-in/right-out. Any vehicles that need to perform a left turn out from Second Street would need to perform a U-turn at the W. Cliff Dr/Center St & Pacific Ave roundabout or perform a westbound left at the Pacific Street & Front Street (S) intersection.
 - An alternative improvement is to install a roundabout or a signal. As shown in **Appendix J** the peak hour signal warrant is met at this intersection; however, a signal may be too close in proximity to the existing roundabouts and may interrupt flows. A full signal warrant should be reviewed during the Cumulative Conditions year (2030) to determine if a signal is warranted at this intersection

The queueing analysis shows that Laurel Street will continue to have queueing challenges and that modified lane configurations, land dedication from adjacent parcels, turn restrictions, and improved coordination for the signals should be considered to improve traffic flow. It is recommended that a future TIF update consider the following improvements to better accommodate queues:

- Laurel Street between Chestnut Street and San Lorenzo Boulevard - Signal timing coordination modifications
- Intersection #5: Pacific Avenue & Laurel Street

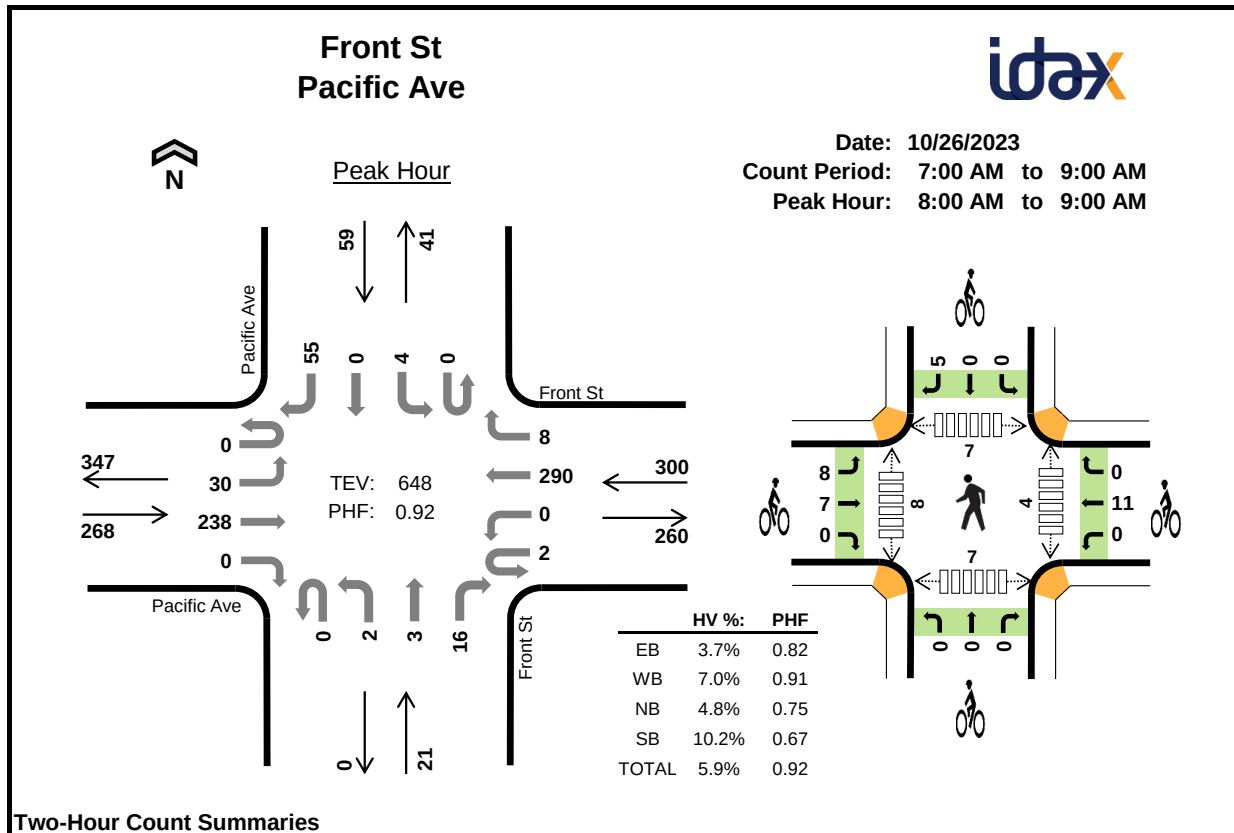
- o Remove eastbound and westbound left turn pockets and restrict left turns.
- o Add second eastbound through lane

A parking analysis was completed for informational purposes, even though that parking supply regulation is exempt per state law for this project. Preliminary architectural designs estimate providing a total off-street parking supply of 1,020 spaces while 225 on-street parking spaces are estimated in the project area. The parking analysis was completed for two development scenarios ranging from 1,060 and 1,800 dwelling units with approximately 60,000 square footage of commercial for both scenarios. At up to 1,060 dwelling units constructed, the project area on-street parking, developer provided off-street parking, and existing city garages are expected to be able to accommodate the increased parking demand during arena events. During the entitlement phase of the Project, it is recommended to review the proposed dwelling unit count and review the parking capacity. The existing Downtown parking garages are estimated to be at approximately 92% capacity at 1,060 dwelling units and 60,000 square feet of commercial. As the development increases over those development thresholds, the City will evaluate if additional parking supply is needed in the Downtown. In the meantime, travel demand management techniques can be used to reduce the amount of parking needed.

An evaluation of providing permanent access control on Laurel Street Extension was shown to be feasible and slightly beneficial to the project area for southbound travel only. It was determined to be infeasible to allow two-way traffic on the single-lane roadway due to lack of queuing capacity at Laurel Street Extension and 3rd Street.

Appendix A

Traffic Count Data Sheets

**Two-Hour Count Summaries**

Interval Start		Pacific Ave				Front St				Front St				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	7:00 AM	0	2	20	0	0	0	23	3	0	0	0	5	0	0	0	6	59	0
	7:15 AM	0	0	18	0	0	0	28	3	0	0	0	3	0	0	0	7	59	0
	7:30 AM	0	4	43	0	0	0	34	0	0	0	0	7	0	0	0	7	95	0
	7:45 AM	0	6	49	0	0	0	51	1	0	0	1	5	0	3	0	7	123	336
	8:00 AM	0	6	41	0	0	0	76	2	0	1	1	5	0	1	0	21	154	431
	8:15 AM	0	9	56	0	2	0	64	2	0	0	1	5	0	1	0	16	156	528
	8:30 AM	0	5	69	0	0	0	70	2	0	1	1	4	0	0	0	9	161	594
	8:45 AM	0	10	72	0	0	0	80	2	0	0	0	2	0	2	0	9	177	648
Count Total		0	42	368	0	2	0	426	15	0	2	4	36	0	7	0	82	984	0
Peak Hour	All	0	30	238	0	2	0	290	8	0	2	3	16	0	4	0	55	648	0
	HV	0	2	8	0	2	0	18	1	0	0	0	1	0	0	0	6	38	0
	HV%	-	7%	3%	-	100%	-	6%	13%	-	0%	0%	6%	-	0%	-	11%	6%	0

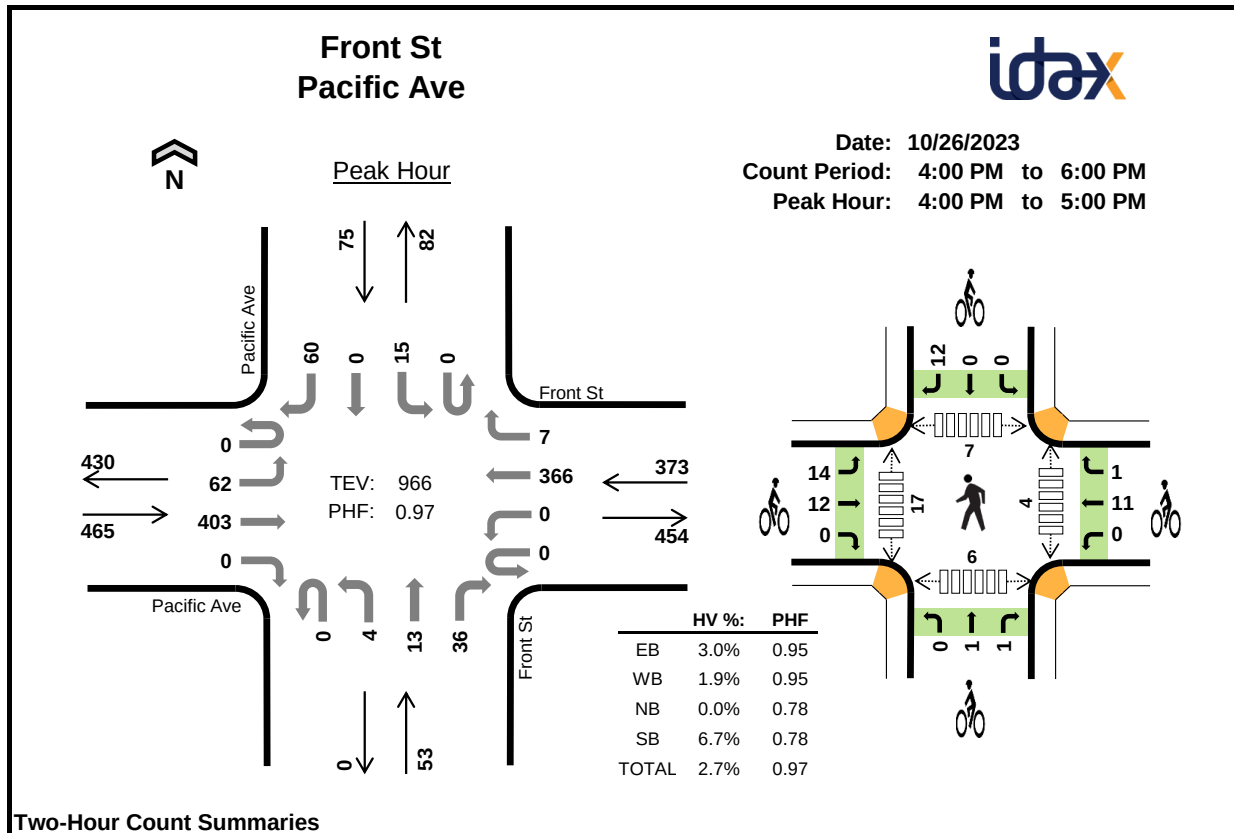
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	0	2	4	0	0	0	1	1	0	1	1	0	2
7:15 AM	2	4	0	0	6	2	3	1	1	7	0	4	0	0	4
7:30 AM	4	2	0	2	8	2	1	0	3	6	0	2	2	0	4
7:45 AM	4	2	0	0	6	1	2	0	0	3	0	2	2	0	4
8:00 AM	1	4	0	2	7	3	3	0	0	6	1	1	1	3	6
8:15 AM	5	7	0	0	12	2	4	0	0	6	1	5	1	1	8
8:30 AM	1	5	0	3	9	6	1	0	3	10	1	1	4	2	8
8:45 AM	3	5	1	1	10	4	3	0	2	9	1	1	1	1	4
Count Total	21	30	1	10	62	20	17	1	10	48	4	17	12	7	40
Peak Hour	10	21	1	6	38	15	11	0	5	31	4	8	7	7	26

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Pacific Ave				Front St				Front St				Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	4	0
7:15 AM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0
7:30 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	2	8	0
7:45 AM	0	3	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	24
8:00 AM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	2	7	27
8:15 AM	0	0	5	0	2	0	4	1	0	0	0	0	0	0	0	0	0	12	33
8:30 AM	0	1	0	0	0	0	5	0	0	0	0	0	0	0	0	0	3	9	34
8:45 AM	0	1	2	0	0	0	5	0	0	0	0	1	0	0	0	0	1	10	38
Count Total	0	5	16	0	2	0	27	1	0	0	0	1	0	0	0	0	10	62	0
Peak Hour	0	2	8	0	2	0	18	1	0	0	0	1	0	0	0	0	6	38	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Pacific Ave			Front St			Front St			Pacific Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0				
7:15 AM	0	2	0	0	3	0	0	1	0	0	0	1	7	0				
7:30 AM	1	1	0	0	1	0	0	0	0	0	0	3	6	0				
7:45 AM	1	0	0	0	2	0	0	0	0	0	0	0	3	17				
8:00 AM	2	1	0	0	3	0	0	0	0	0	0	0	6	22				
8:15 AM	0	2	0	0	4	0	0	0	0	0	0	0	6	21				
8:30 AM	3	3	0	0	1	0	0	0	0	0	0	3	10	25				
8:45 AM	3	1	0	0	3	0	0	0	0	0	0	2	9	31				
Count Total	10	10	0	0	17	0	0	1	0	0	0	10	48	0				
Peak Hour	8	7	0	0	11	0	0	0	0	0	0	5	31	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Pacific Ave				Front St				Front St				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	12	106	0	0	0	94	2	0	0	4	11	0	3	0	13	245	0
4:15 PM		0	20	103	0	0	0	82	0	0	1	1	8	0	2	0	14	231	0
4:30 PM		0	18	99	0	0	0	93	4	0	2	4	11	0	4	0	15	250	0
4:45 PM		0	12	95	0	0	0	97	1	0	1	4	6	0	6	0	18	240	966
5:00 PM		0	15	67	0	0	0	104	2	0	1	2	9	0	1	0	16	217	938
5:15 PM		0	22	92	0	0	0	109	1	0	1	4	3	0	1	0	18	251	958
5:30 PM		0	21	80	0	0	0	107	0	0	0	1	8	0	1	0	16	234	942
5:45 PM		0	16	94	0	0	0	101	2	0	1	1	5	0	3	0	18	241	943
Count Total		0	136	736	0	0	0	787	12	0	7	21	61	0	21	0	128	1,909	0
Peak Hour	All	0	62	403	0	0	0	366	7	0	4	13	36	0	15	0	60	966	0
	HV	0	6	8	0	0	0	7	0	0	0	0	0	0	0	0	5	26	0
	HV%	-	10%	2%	-	-	-	2%	0%	-	0%	0%	0%	-	0%	-	8%	3%	0

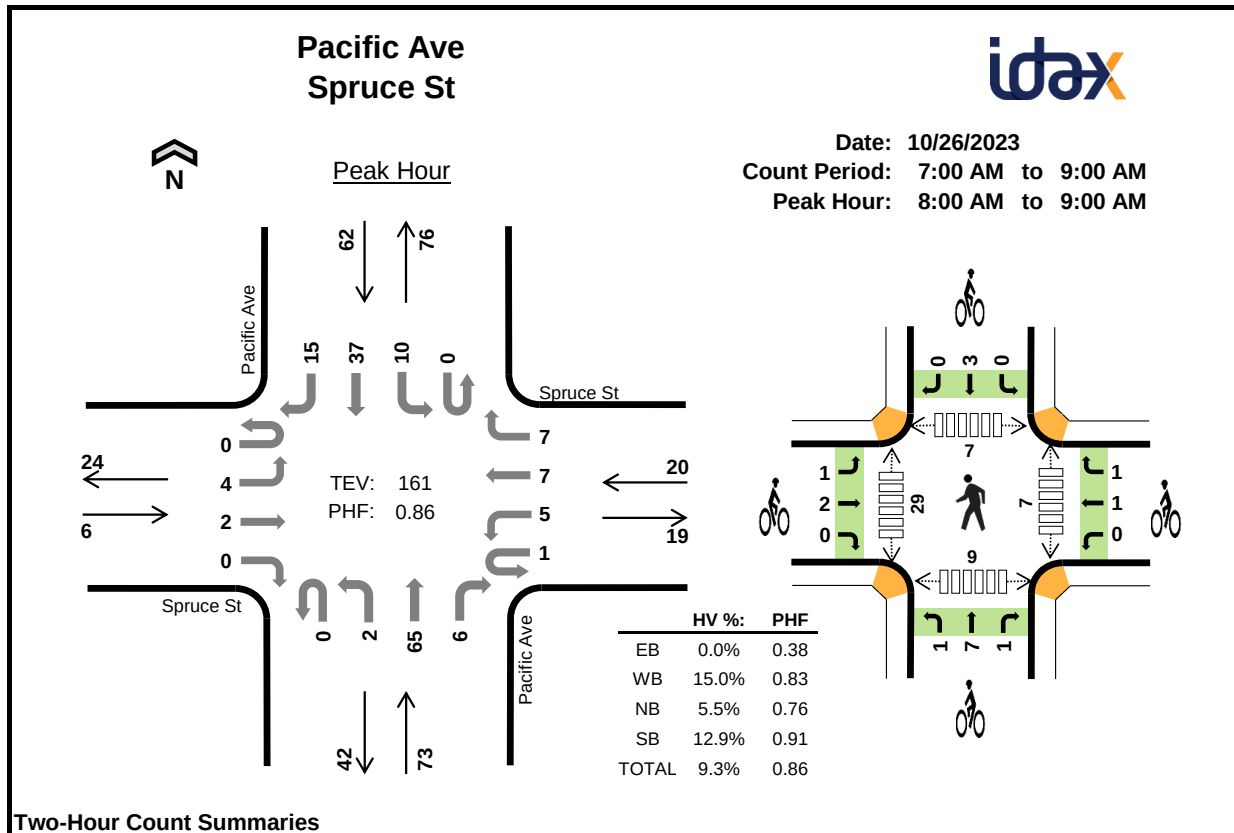
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	0	0	1	9	3	6	1	2	12	0	3	2	0	5
4:15 PM	1	4	0	1	6	6	2	1	3	12	0	6	1	0	7
4:30 PM	2	3	0	2	7	7	2	0	2	11	1	7	2	3	13
4:45 PM	3	0	0	1	4	10	2	0	5	17	3	1	2	3	9
5:00 PM	1	0	0	1	2	10	3	0	7	20	2	4	2	5	13
5:15 PM	2	1	0	1	4	6	2	4	8	20	4	6	3	1	14
5:30 PM	3	2	0	2	7	5	6	2	7	20	1	1	4	0	6
5:45 PM	4	0	0	1	5	4	5	0	2	11	1	9	2	0	12
Count Total	24	10	0	10	44	51	28	8	36	123	12	37	18	12	79
Peak Hour	14	7	0	5	26	26	12	2	12	52	4	17	7	6	34

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Pacific Ave				Front St				Front St				Pacific Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0
4:15 PM	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	1	6	0
4:30 PM	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	2	7	0
4:45 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	26
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	19
5:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	4	17
5:30 PM	0	1	2	0	0	0	2	0	0	0	0	0	0	0	0	2	7	17
5:45 PM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	5	18
Count Total	0	10	14	0	0	0	10	0	0	0	0	0	0	0	0	10	44	0
Peak Hour	0	6	8	0	0	0	7	0	0	0	0	0	0	0	0	5	26	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Pacific Ave			Front St			Front St			Pacific Ave			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	2	1	0	0	6	0	0	0	1	0	0	2	12	0			
4:15 PM	4	2	0	0	2	0	0	1	0	0	0	3	12	0			
4:30 PM	4	3	0	0	2	0	0	0	0	0	0	2	11	0			
4:45 PM	4	6	0	0	1	1	0	0	0	0	0	5	17	52			
5:00 PM	6	4	0	0	3	0	0	0	0	0	0	7	20	60			
5:15 PM	4	2	0	0	2	0	1	0	3	0	0	8	20	68			
5:30 PM	4	1	0	0	6	0	0	2	0	0	0	7	20	77			
5:45 PM	2	2	0	0	5	0	0	0	0	0	0	2	11	71			
Count Total	30	21	0	0	27	1	1	3	4	0	0	36	123	0			
Peak Hour	14	12	0	0	11	1	0	1	1	0	0	12	52	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Spruce St				Spruce St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	1	0	0	2	1	3	0	0	8	1	0	2	5	0	23	0
7:15 AM		0	0	0	1	0	0	1	3	0	0	6	0	0	0	3	0	14	0
7:30 AM		0	1	1	1	0	0	2	0	0	0	12	2	0	4	6	2	31	0
7:45 AM		0	2	2	2	0	2	1	0	0	0	13	1	0	2	4	2	31	99
8:00 AM		0	2	2	0	0	2	3	1	0	0	14	1	0	2	8	5	40	116
8:15 AM		0	1	0	0	0	0	2	3	0	1	21	2	0	5	8	4	47	149
8:30 AM		0	0	0	0	1	1	2	2	0	1	15	2	0	2	11	4	41	159
8:45 AM		0	1	0	0	0	2	0	1	0	0	15	1	0	1	10	2	33	161
Count Total		0	7	6	4	1	9	12	13	0	2	104	10	0	18	55	19	260	0
Peak Hour	All	0	4	2	0	1	5	7	7	0	2	65	6	0	10	37	15	161	0
	HV	0	0	0	0	0	1	0	2	0	0	4	0	0	2	6	0	15	0
	HV%	-	0%	0%	-	0%	20%	0%	29%	-	0%	6%	0%	-	20%	16%	0%	9%	0

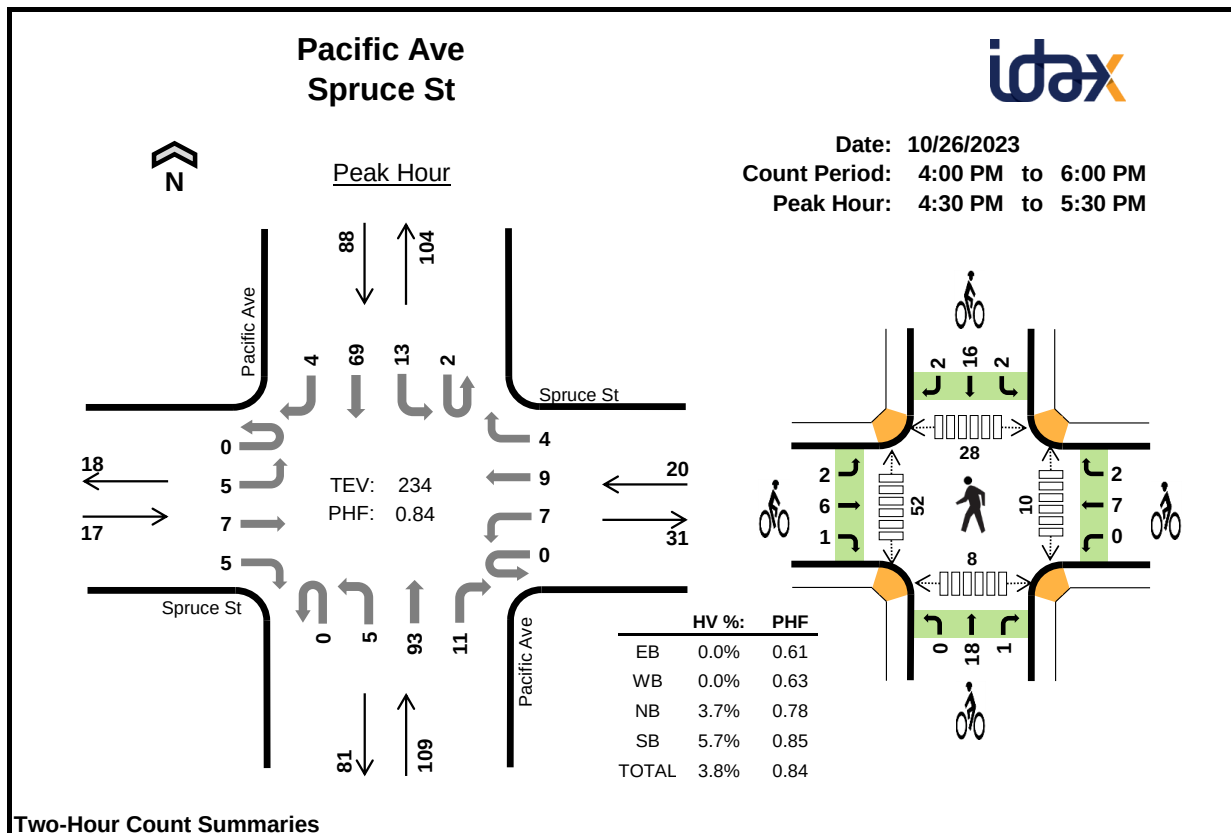
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	2	2	0	0	0	1	1	1	3	3	1	8
7:15 AM	0	2	0	0	2	1	0	2	1	4	0	5	0	0	5
7:30 AM	0	0	0	4	4	0	0	2	1	3	0	4	2	1	7
7:45 AM	0	0	2	1	3	0	2	1	0	3	4	8	1	2	15
8:00 AM	0	1	0	1	2	2	0	3	0	5	1	9	3	6	19
8:15 AM	0	1	1	3	5	0	0	0	0	0	3	3	1	0	7
8:30 AM	0	1	2	3	6	1	2	3	2	8	1	10	1	1	13
8:45 AM	0	0	1	1	2	0	0	3	1	4	2	7	2	2	13
Count Total	0	5	6	15	26	4	4	14	6	28	12	49	13	13	87
Peak Hour	0	3	4	8	15	3	2	9	3	17	7	29	7	9	52

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Spruce St				Spruce St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3	11
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	11
8:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1	0	0	5	14
8:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0	0	6	16
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	15
Count Total	0	0	0	0	0	1	0	4	0	0	6	0	0	5	10	0	0	26	0
Peak Hour	0	0	0	0	0	1	0	2	0	0	4	0	0	2	6	0	0	15	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Spruce St			Spruce St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0				
7:15 AM	0	1	0	0	0	0	0	1	1	0	1	0	4	0				
7:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	3	0				
7:45 AM	0	0	0	0	1	1	0	1	0	0	0	0	3	11				
8:00 AM	0	2	0	0	0	0	0	2	1	0	0	0	5	15				
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	11				
8:30 AM	1	0	0	0	1	1	1	2	0	0	2	0	8	16				
8:45 AM	0	0	0	0	0	0	0	3	0	0	1	0	4	17				
Count Total	1	3	0	0	2	2	1	11	2	0	5	1	28	0				
Peak Hour	1	2	0	0	1	1	1	7	1	0	3	0	17	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Spruce St				Spruce St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	0	1	0	3	2	2	0	0	20	0	0	1	12	4	46	0
4:15 PM		0	1	2	1	0	2	0	0	1	0	24	0	0	0	14	3	48	0
4:30 PM		0	0	2	2	0	3	2	1	0	2	20	4	2	5	16	1	60	0
4:45 PM		0	3	0	2	0	1	4	1	0	0	20	4	0	2	16	0	53	207
5:00 PM		0	2	4	1	0	0	0	0	0	0	23	1	0	1	18	1	51	212
5:15 PM		0	0	1	0	0	3	3	2	0	3	30	2	0	5	19	2	70	234
5:30 PM		0	3	1	4	0	2	2	0	0	0	23	2	0	0	19	0	56	230
5:45 PM		0	0	0	1	1	4	3	0	0	1	25	3	0	2	17	0	57	234
Count Total		0	10	10	12	1	18	16	6	1	6	185	16	2	16	131	11	441	0
Peak Hour	All	0	5	7	5	0	7	9	4	0	5	93	11	2	13	69	4	234	0
	HV	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	9	0
	HV%	-	0%	0%	0%	-	0%	0%	0%	-	0%	4%	0%	0%	0%	7%	0%	4%	0

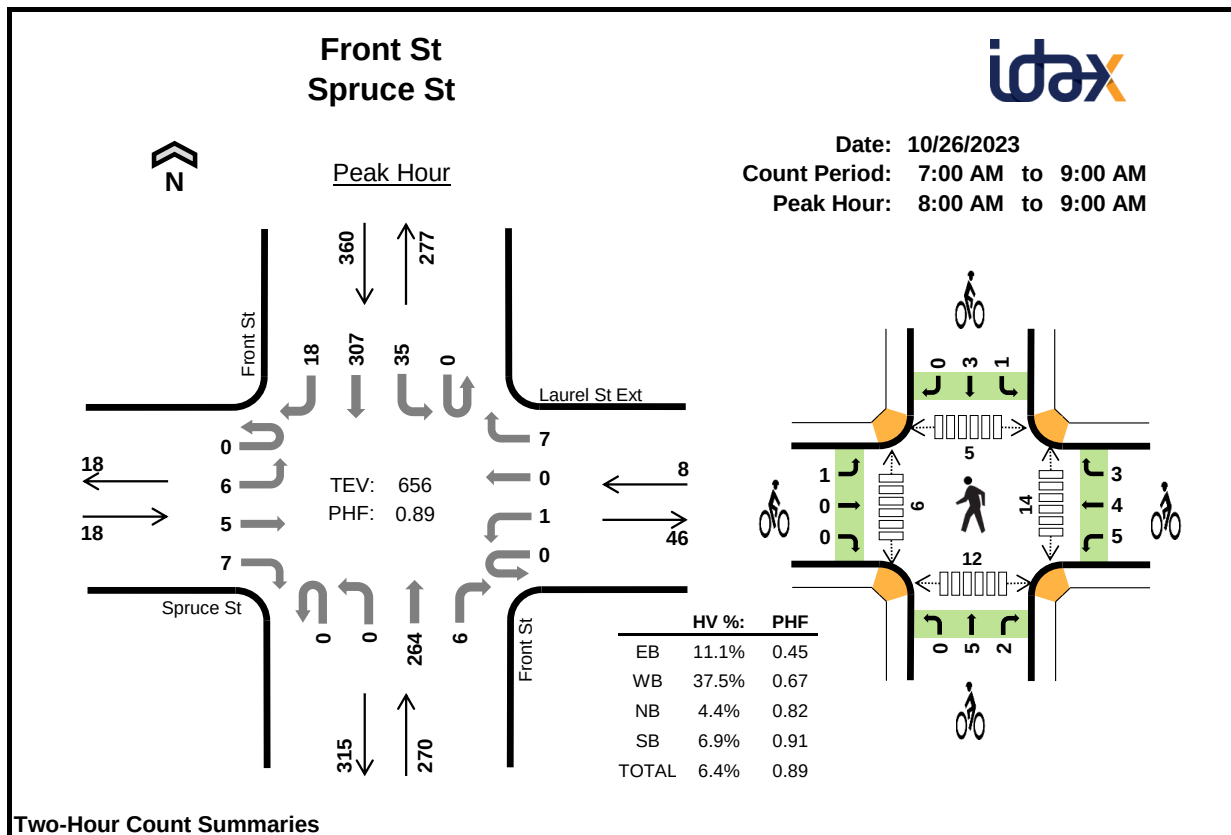
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	1	3	3	2	3	7	15	5	17	4	2	28
4:15 PM	0	0	1	1	2	0	0	8	5	13	10	18	4	4	36
4:30 PM	0	0	1	2	3	2	4	4	1	11	0	11	5	0	16
4:45 PM	0	0	2	1	3	4	3	3	4	14	3	12	8	3	26
5:00 PM	0	0	1	1	2	0	0	5	11	16	5	17	12	0	34
5:15 PM	0	0	0	1	1	3	2	7	4	16	2	12	3	5	22
5:30 PM	0	0	1	2	3	1	1	4	11	17	2	17	5	4	28
5:45 PM	0	0	2	1	3	2	0	1	5	8	0	20	2	5	27
Count Total	0	0	10	10	20	15	12	35	48	110	27	124	43	23	217
Peak Hour	0	0	4	5	9	9	9	19	20	57	10	52	28	8	98

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Spruce St				Spruce St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	11
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	10
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	9
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	9
Count Total	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0	20	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	9	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Spruce St			Spruce St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	1	2	0	1	1	0	0	3	0	2	3	2	15	0			
4:15 PM	0	0	0	0	0	0	0	7	1	1	3	1	13	0			
4:30 PM	0	2	0	0	4	0	0	4	0	0	0	1	11	0			
4:45 PM	1	2	1	0	1	2	0	3	0	0	3	1	14	53			
5:00 PM	0	0	0	0	0	0	0	4	1	1	10	0	16	54			
5:15 PM	1	2	0	0	2	0	0	7	0	1	3	0	16	57			
5:30 PM	1	0	0	1	0	0	0	4	0	1	9	1	17	63			
5:45 PM	1	1	0	0	0	0	0	1	0	1	2	2	8	57			
Count Total	5	9	1	2	8	2	0	33	2	7	33	8	110	0			
Peak Hour	2	6	1	0	7	2	0	18	1	2	16	2	57	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Spruce St				Laurel St Ext				Front St				Front St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	2	1	1	0	0	1	0	0	0	28	1	0	1	29	6	70	0
7:15 AM		0	0	0	0	0	0	0	0	0	1	25	1	1	1	30	4	63	0
7:30 AM		0	3	3	0	0	0	0	1	0	0	45	0	1	4	37	4	98	0
7:45 AM		0	1	2	2	0	0	0	1	0	0	57	2	0	8	53	3	129	360
8:00 AM		0	1	1	1	0	0	0	1	0	0	43	2	0	11	75	5	140	430
8:15 AM		0	2	2	6	0	0	0	3	0	0	65	3	0	5	70	5	161	528
8:30 AM		0	2	1	0	0	1	0	2	0	0	74	1	0	11	74	5	171	601
8:45 AM		0	1	1	0	0	0	0	1	0	0	82	0	0	8	88	3	184	656
Count Total		0	12	11	10	0	1	1	9	0	1	419	10	2	49	456	35	1,016	0
Peak Hour	All	0	6	5	7	0	1	0	7	0	0	264	6	0	35	307	18	656	0
	HV	0	0	0	2	0	0	0	3	0	0	10	2	0	3	19	3	42	0
	HV%	-	0%	0%	29%	-	0%	-	43%	-	-	4%	33%	-	9%	6%	17%	6%	0

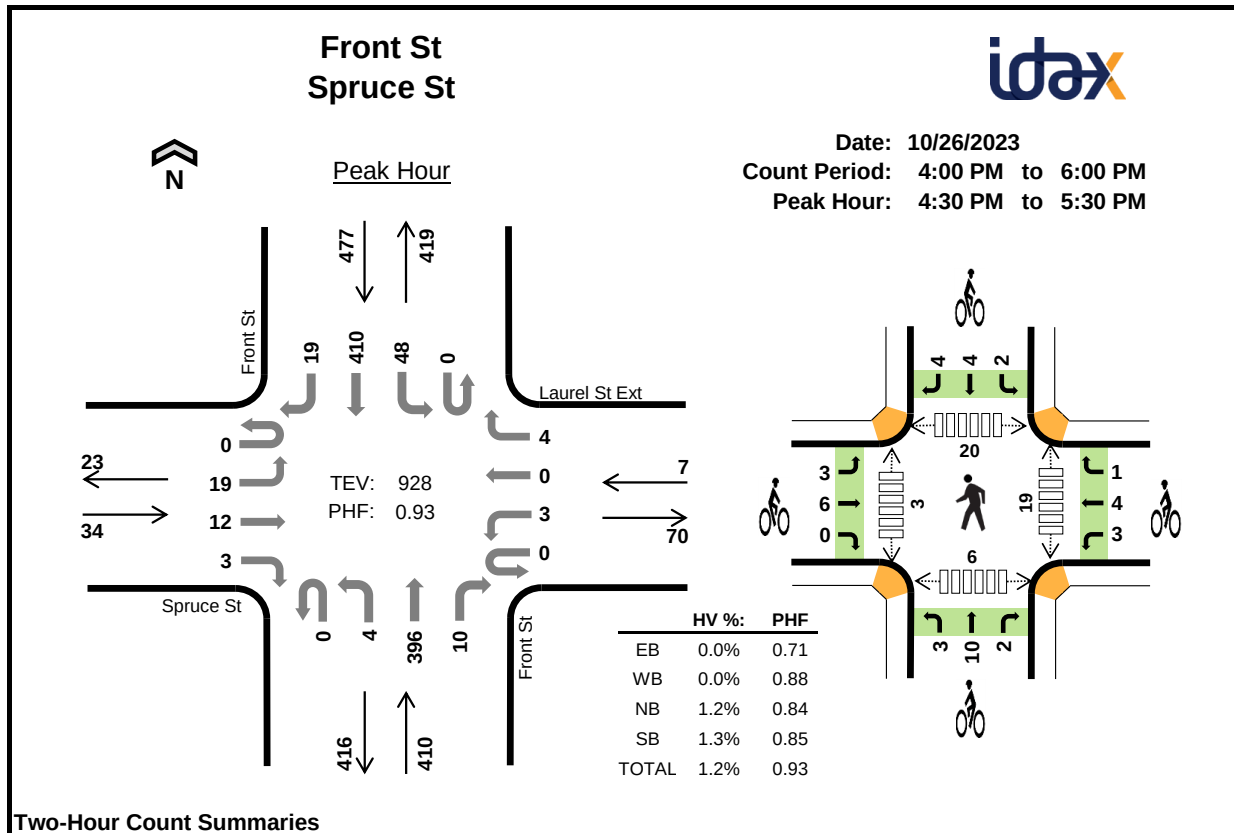
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	3	4	0	0	0	2	2	3	1	2	1	7
7:15 AM	0	0	2	6	8	2	0	2	3	7	0	0	0	0	0
7:30 AM	2	0	3	2	7	0	0	1	1	2	4	1	0	4	9
7:45 AM	1	1	1	2	5	0	4	1	1	6	3	0	0	4	7
8:00 AM	0	1	2	9	12	1	2	0	1	4	3	1	2	1	7
8:15 AM	2	2	4	5	13	0	3	3	1	7	0	3	1	4	8
8:30 AM	0	0	4	5	9	0	3	3	0	6	6	2	1	7	16
8:45 AM	0	0	2	6	8	0	4	1	2	7	5	0	1	0	6
Count Total	5	4	19	38	66	3	16	11	11	41	24	8	7	21	60
Peak Hour	2	3	12	25	42	1	12	7	4	24	14	6	5	12	37

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Spruce St				Laurel St Ext				Front St				Front St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	4	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	2	8	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	3	0	0	0	2	0	7	0
7:45 AM	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0	5	24
8:00 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	2	6	1	12	32
8:15 AM	0	0	0	2	0	0	0	2	0	0	3	1	0	0	4	1	13	37
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	1	9	39
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	5	0	8	42
Count Total	0	2	0	3	0	0	0	4	0	1	16	2	1	4	27	6	66	0
Peak Hour	0	0	0	2	0	0	0	3	0	0	10	2	0	3	19	3	42	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Spruce St			Laurel St Ext			Front St			Front St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	2	0				
7:15 AM	0	2	0	0	0	0	0	2	0	0	3	0	7	0				
7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	0				
7:45 AM	0	0	0	2	2	0	1	0	0	0	1	0	6	17				
8:00 AM	1	0	0	1	0	1	0	0	0	0	1	0	4	19				
8:15 AM	0	0	0	1	1	1	0	2	1	0	1	0	7	19				
8:30 AM	0	0	0	1	2	0	0	2	1	0	0	0	6	23				
8:45 AM	0	0	0	2	1	1	0	1	0	1	1	0	7	24				
Count Total	1	2	0	7	6	3	1	8	2	2	9	0	41	0				
Peak Hour	1	0	0	5	4	3	0	5	2	1	3	0	24	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start		Spruce St				Laurel St Ext				Front St				Front St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	1	0	0	0	1	0	0	0	110	11	0	10	94	4	231	0
4:15 PM		0	3	1	0	0	0	0	0	0	0	110	0	0	12	84	4	214	0
4:30 PM		0	6	5	1	0	1	0	0	0	3	118	1	0	11	101	3	250	0
4:45 PM		0	5	1	2	0	0	0	2	0	0	107	3	0	7	93	6	226	921
5:00 PM		0	4	2	0	0	1	0	1	0	0	77	5	0	11	103	1	205	895
5:15 PM		0	4	4	0	0	1	0	1	0	1	94	1	0	19	113	9	247	928
5:30 PM		0	3	1	0	0	0	0	2	0	0	92	3	0	11	117	7	236	914
5:45 PM		0	3	2	0	0	1	0	3	0	0	99	6	0	5	96	8	223	911
Count Total		0	28	17	3	0	4	1	9	0	4	807	30	0	86	801	42	1,832	0
Peak Hour	All	0	19	12	3	0	3	0	4	0	4	396	10	0	48	410	19	928	0
	HV	0	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	11	0
	HV%	-	0%	0%	0%	-	0%	-	0%	-	0%	1%	0%	-	0%	1%	0%	1%	0

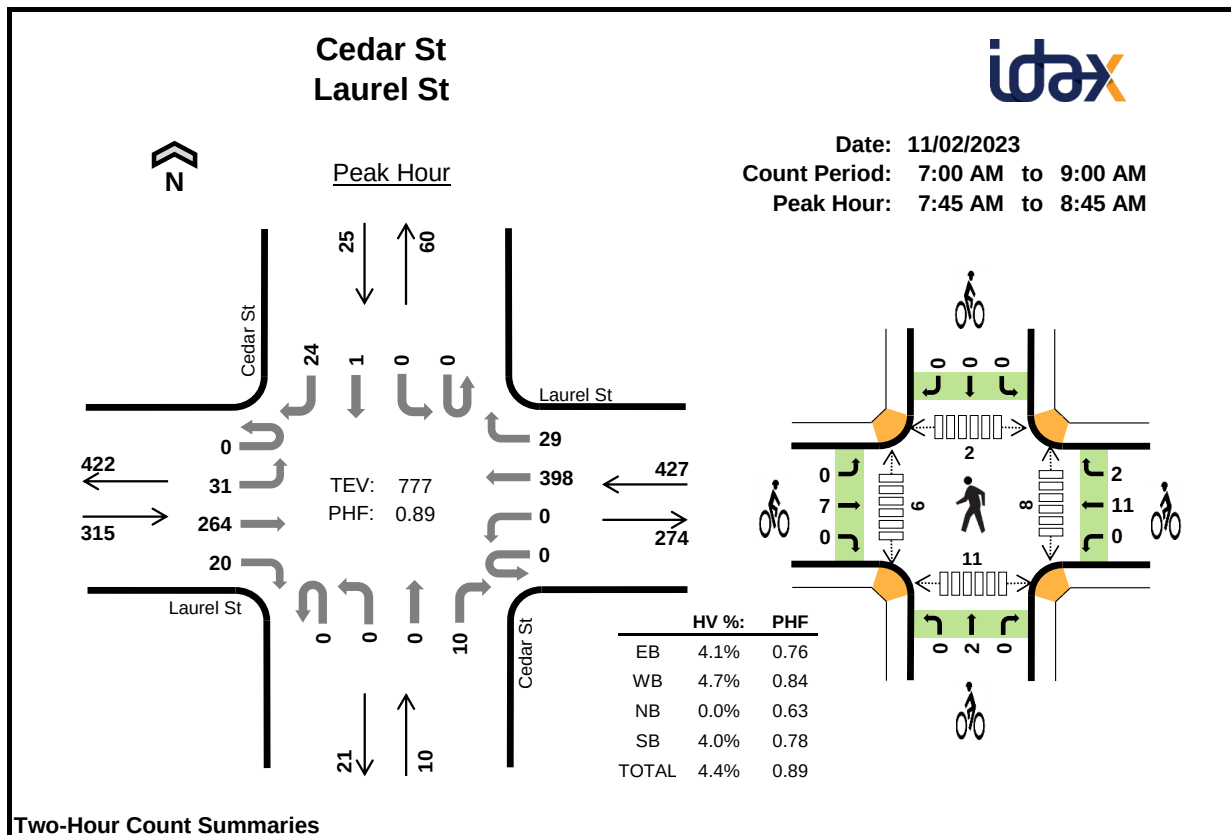
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	5	0	5	2	5	1	5	13	2	2	4	4	12
4:15 PM	0	0	0	2	2	1	2	2	1	6	2	1	0	2	5
4:30 PM	0	0	1	5	6	3	5	3	4	15	3	0	2	1	6
4:45 PM	0	0	1	0	1	2	1	2	3	8	5	1	4	0	10
5:00 PM	0	0	1	0	1	2	1	7	1	11	6	2	7	3	18
5:15 PM	0	0	2	1	3	2	1	3	2	8	5	0	7	2	14
5:30 PM	0	0	3	2	5	3	1	1	6	11	1	2	6	4	13
5:45 PM	0	0	1	0	1	5	1	2	5	13	1	3	3	4	11
Count Total	0	0	14	10	24	20	17	21	27	85	25	11	33	20	89
Peak Hour	0	0	5	6	11	9	8	15	10	42	19	3	20	6	48

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Spruce St				Laurel St Ext				Front St				Front St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	6	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	14
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	10
5:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	11
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	5	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	10
Count Total	0	0	0	0	0	0	0	0	0	0	14	0	0	0	10	0	24	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	11	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Spruce St			Laurel St Ext			Front St			Front St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	2	0	3	2	0	0	1	0	1	4	0	13	0			
4:15 PM	0	1	0	2	0	0	0	2	0	0	1	0	6	0			
4:30 PM	1	2	0	3	1	1	1	2	0	1	0	3	15	0			
4:45 PM	1	1	0	0	1	0	0	2	0	1	1	1	8	42			
5:00 PM	1	1	0	0	1	0	2	5	0	0	1	0	11	40			
5:15 PM	0	2	0	0	1	0	0	1	2	0	2	0	8	42			
5:30 PM	0	3	0	1	0	0	0	0	1	1	5	0	11	38			
5:45 PM	1	4	0	0	1	0	0	0	2	0	5	0	13	43			
Count Total	4	16	0	9	7	1	3	13	5	4	19	4	85	0			
Peak Hour	3	6	0	3	4	1	3	10	2	2	4	4	42	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Cedar St				Cedar St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	20	1	0	0	39	4	0	0	0	2	0	0	0	2	68	0
7:15 AM		0	2	23	2	0	0	40	3	0	0	0	1	0	0	0	4	75	0
7:30 AM		0	2	40	3	0	0	68	3	0	0	0	2	0	0	0	2	120	0
7:45 AM		0	9	58	4	0	0	94	7	0	0	0	4	0	0	1	6	183	446
8:00 AM		0	6	45	6	0	0	103	4	0	0	0	1	0	0	0	8	173	551
8:15 AM		0	4	75	4	0	0	116	11	0	0	0	2	0	0	0	6	218	694
8:30 AM		0	12	86	6	0	0	85	7	0	0	0	3	0	0	0	4	203	777
8:45 AM		0	7	55	5	0	0	91	9	0	0	0	2	0	0	0	8	177	771
Count Total		0	42	402	31	0	0	636	48	0	0	0	17	0	0	1	40	1,217	0
Peak Hour	All	0	31	264	20	0	0	398	29	0	0	0	10	0	0	1	24	777	0
	HV	0	5	8	0	0	0	20	0	0	0	0	0	0	0	0	1	34	0
	HV%	-	16%	3%	0%	-	-	5%	0%	-	-	-	0%	-	-	0%	4%	4%	0

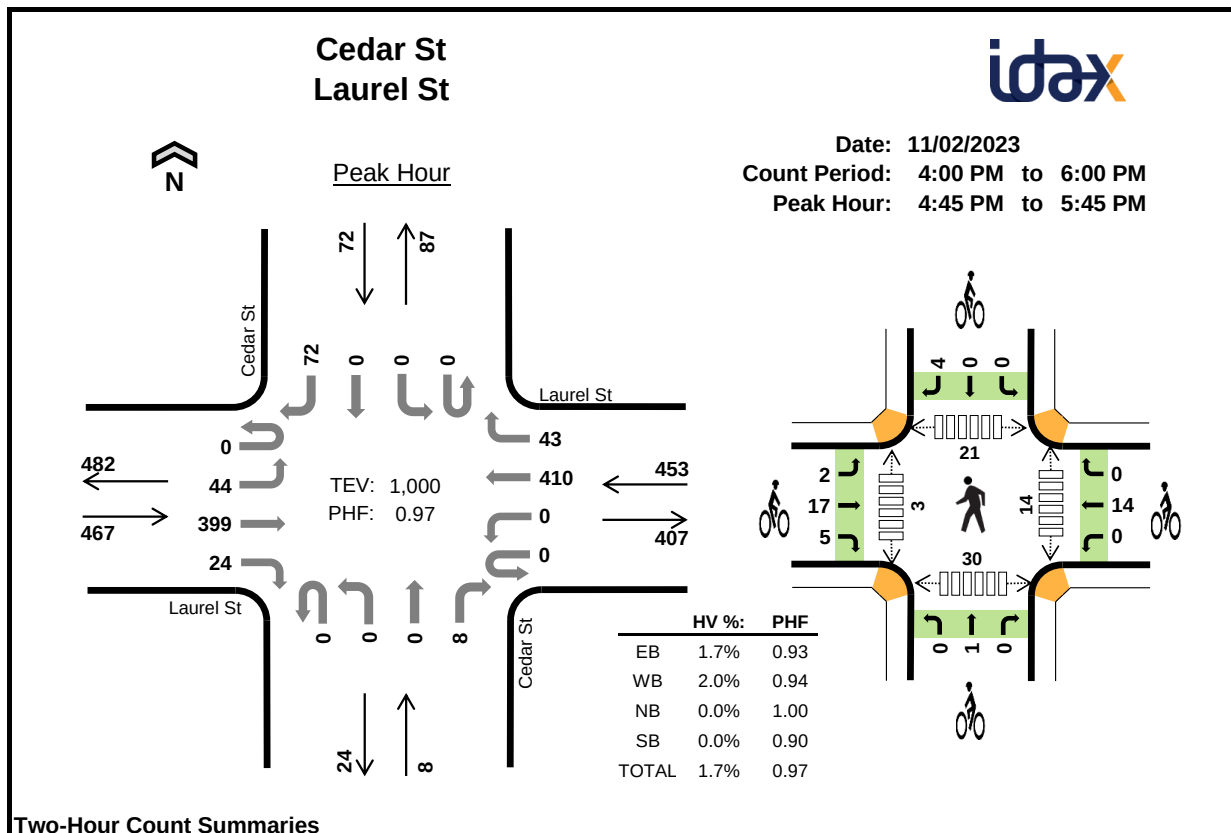
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
7:15 AM	1	3	0	1	5	3	0	0	0	3	0	0	0	2	2
7:30 AM	1	4	0	0	5	1	1	0	0	2	1	1	2	2	6
7:45 AM	2	6	0	1	9	2	3	1	0	6	2	3	1	4	10
8:00 AM	3	1	0	0	4	2	2	0	0	4	1	2	0	4	7
8:15 AM	5	5	0	0	10	1	6	1	0	8	3	0	0	0	3
8:30 AM	3	8	0	0	11	2	2	0	0	4	2	1	1	3	7
8:45 AM	2	3	0	0	5	1	2	0	0	3	5	2	1	6	14
Count Total	17	30	0	2	49	12	17	2	0	31	14	10	5	22	51
Peak Hour	13	20	0	1	34	7	13	2	0	22	8	6	2	11	27

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				Cedar St				Cedar St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	1	5
7:30 AM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
7:45 AM	0	1	1	0	0	0	6	0	0	0	0	0	0	0	0	0	1	9
8:00 AM	0	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10
8:30 AM	0	1	2	0	0	0	8	0	0	0	0	0	0	0	0	0	0	11
8:45 AM	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	6	11	0	0	0	30	0	0	0	0	0	0	0	0	0	2	49
Peak Hour	0	5	8	0	0	0	20	0	0	0	0	0	0	0	0	0	1	34

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Cedar St			Cedar St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
7:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	3	0				
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0				
7:45 AM	0	2	0	0	3	0	0	1	0	0	0	0	6	12				
8:00 AM	0	2	0	0	1	1	0	0	0	0	0	0	4	15				
8:15 AM	0	1	0	0	5	1	0	1	0	0	0	0	8	20				
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	4	22				
8:45 AM	0	1	0	0	2	0	0	0	0	0	0	0	3	19				
Count Total	0	12	0	0	15	2	0	2	0	0	0	0	31	0				
Peak Hour	0	7	0	0	11	2	0	2	0	0	0	0	22	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Cedar St				Cedar St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	6	105	5	0	0	76	12	0	0	0	3	0	0	0	22	229	0
4:15 PM		0	6	96	4	0	0	74	6	0	0	0	3	0	0	0	14	203	0
4:30 PM		0	9	91	2	0	0	68	7	0	0	0	1	0	0	0	21	199	0
4:45 PM		0	10	91	6	0	0	106	14	0	0	0	2	0	0	0	18	247	878
5:00 PM		0	6	103	3	0	0	99	10	0	0	0	2	0	0	0	16	239	888
5:15 PM		0	16	98	12	0	0	101	10	0	0	0	2	0	0	0	18	257	942
5:30 PM		0	12	107	3	0	0	104	9	0	0	0	2	0	0	0	20	257	1,000
5:45 PM		0	10	106	7	0	0	72	10	0	0	0	4	1	0	0	22	232	985
Count Total		0	75	797	42	0	0	700	78	0	0	0	19	1	0	0	151	1,863	0
Peak Hour	All	0	44	399	24	0	0	410	43	0	0	0	8	0	0	0	72	1,000	0
	HV	0	2	6	0	0	0	9	0	0	0	0	0	0	0	0	0	17	0
	HV%	-	5%	2%	0%	-	-	2%	0%	-	-	-	0%	-	-	-	0%	2%	0

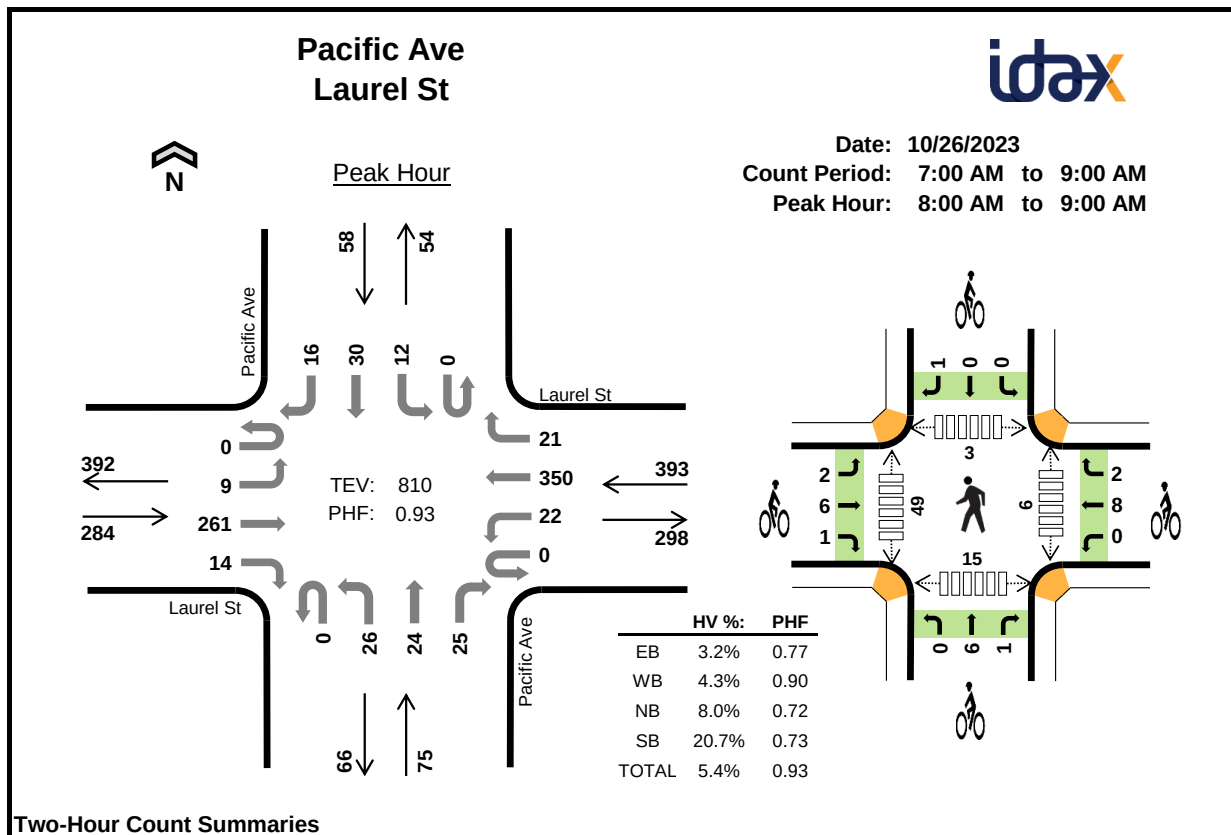
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	2	0	0	3	4	0	3	3	10	6	1	2	6	15
4:15 PM	3	3	0	0	6	7	4	0	0	11	5	1	7	9	22
4:30 PM	4	2	0	0	6	1	1	0	0	2	2	1	5	3	11
4:45 PM	2	4	0	0	6	4	3	1	2	10	3	0	3	7	13
5:00 PM	2	2	0	0	4	6	1	0	1	8	4	3	7	13	27
5:15 PM	1	2	0	0	3	7	7	0	1	15	4	0	7	6	17
5:30 PM	3	1	0	0	4	7	3	0	0	10	3	0	4	4	11
5:45 PM	3	3	0	0	6	3	3	0	3	9	4	3	6	2	15
Count Total	19	19	0	0	38	39	22	4	10	75	31	9	41	50	131
Peak Hour	8	9	0	0	17	24	14	1	4	43	14	3	21	30	68

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				Cedar St				Cedar St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
4:30 PM	0	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0
4:45 PM	0	1	1	0	0	0	4	0	0	0	0	0	0	0	0	0	6	21
5:00 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	22
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	19
5:30 PM	0	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	4	17
5:45 PM	0	1	2	0	0	0	3	0	0	0	0	0	0	0	0	0	6	17
Count Total	0	4	15	0	0	0	19	0	0	0	0	0	0	0	0	0	38	0
Peak Hour	0	2	6	0	0	0	9	0	0	0	0	0	0	0	0	0	17	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Cedar St			Cedar St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	4	0	0	0	0	0	3	0	0	2	1	10	0				
4:15 PM	1	6	0	0	3	1	0	0	0	0	0	0	11	0				
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2	0				
4:45 PM	1	3	0	0	3	0	0	1	0	0	0	2	10	33				
5:00 PM	1	2	3	0	1	0	0	0	0	0	0	1	8	31				
5:15 PM	0	5	2	0	7	0	0	0	0	0	0	1	15	35				
5:30 PM	0	7	0	0	3	0	0	0	0	0	0	0	10	43				
5:45 PM	0	3	0	0	2	1	0	0	0	0	1	2	9	42				
Count Total	3	31	5	0	20	2	0	4	0	0	3	7	75	0				
Peak Hour	2	17	5	0	14	0	0	1	0	0	0	4	43	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	24	1	0	2	36	5	0	0	1	4	0	2	5	2	83	0
7:15 AM		0	0	24	1	0	0	50	1	0	4	1	7	0	1	2	3	94	0
7:30 AM		0	1	31	2	0	5	59	5	0	4	2	4	0	3	4	1	121	0
7:45 AM		0	2	51	1	0	2	88	2	0	5	1	10	0	3	2	5	172	470
8:00 AM		0	3	53	2	0	6	95	4	0	9	3	3	0	3	7	2	190	577
8:15 AM		0	2	59	2	0	5	97	7	0	12	5	9	0	6	11	3	218	701
8:30 AM		0	1	67	3	0	7	77	5	0	1	7	8	0	2	6	6	190	770
8:45 AM		0	3	82	7	0	4	81	5	0	4	9	5	0	1	6	5	212	810
Count Total		0	13	391	19	0	31	583	34	0	39	29	50	0	21	43	27	1,280	0
Peak Hour	All	0	9	261	14	0	22	350	21	0	26	24	25	0	12	30	16	810	0
	HV	0	1	8	0	0	0	9	8	0	1	3	2	0	0	7	5	44	0
	HV%	-	11%	3%	0%	-	0%	3%	38%	-	4%	13%	8%	-	0%	23%	31%	5%	0

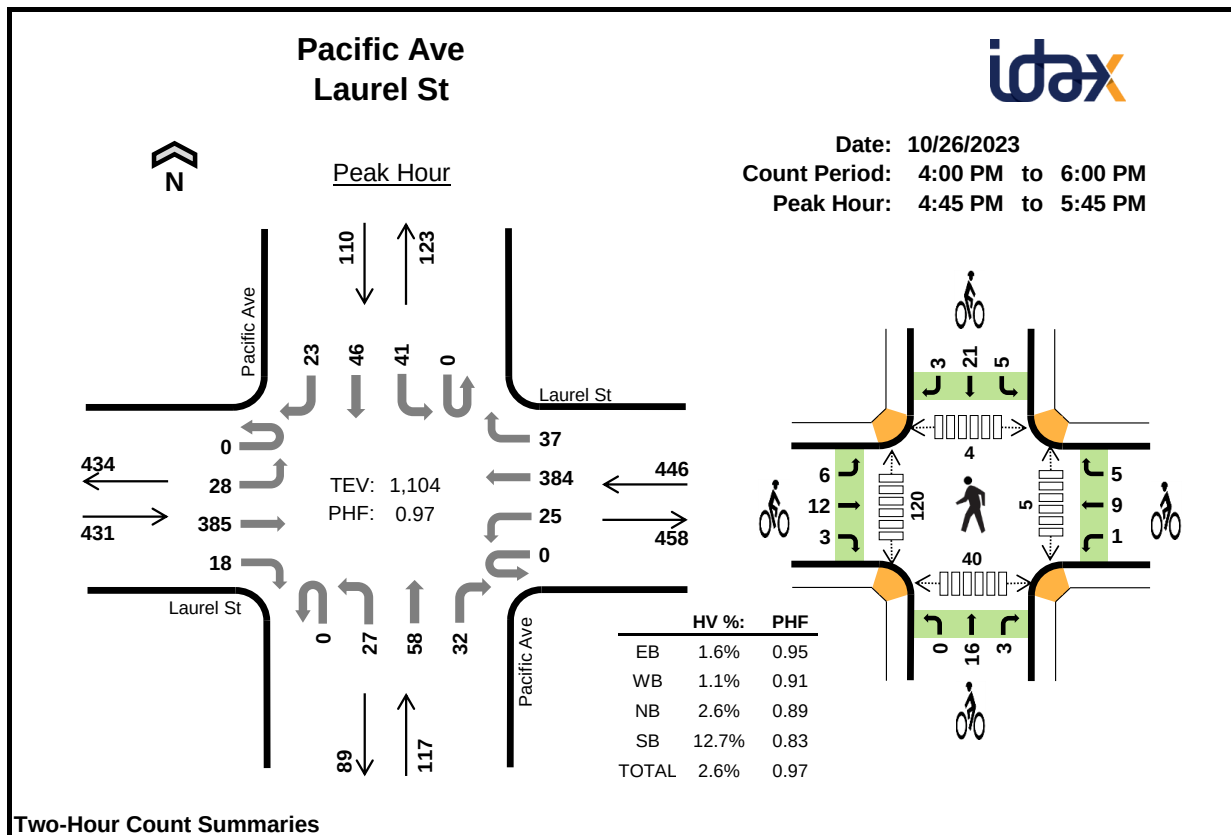
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	2	2	0	0	0	1	1	0	6	1	0	7
7:15 AM	3	0	2	2	7	5	2	0	1	8	0	6	0	1	7
7:30 AM	1	7	1	1	10	2	1	2	2	7	3	10	1	4	18
7:45 AM	2	7	1	2	12	0	4	2	1	7	4	12	4	6	26
8:00 AM	2	5	0	1	8	3	2	2	0	7	2	13	1	4	20
8:15 AM	4	6	2	5	17	2	2	0	0	4	0	9	0	3	12
8:30 AM	2	4	3	3	12	2	4	3	1	10	2	16	1	8	27
8:45 AM	1	2	1	3	7	2	2	2	0	6	2	11	1	0	14
Count Total	15	31	10	19	75	16	17	11	6	50	13	83	9	26	131
Peak Hour	9	17	6	12	44	9	10	7	1	27	6	49	3	15	73

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Laurel St				Laurel St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
7:15 AM	0	0	3	0	0	0	0	0	0	0	1	1	0	0	0	0	2	7	0
7:30 AM	0	0	1	0	0	2	4	1	0	0	0	1	0	0	0	1	0	10	0
7:45 AM	0	0	2	0	0	1	4	2	0	0	1	0	0	0	0	0	2	12	31
8:00 AM	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	1	0	8	37
8:15 AM	0	1	3	0	0	0	2	4	0	1	0	1	0	0	0	3	2	17	47
8:30 AM	0	0	2	0	0	0	1	3	0	0	2	1	0	0	0	2	1	12	49
8:45 AM	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	2	7	44
Count Total	0	1	14	0	0	3	17	11	0	1	5	4	0	0	10	9		75	0
Peak Hour	0	1	8	0	0	0	9	8	0	1	3	2	0	0	7	5		44	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Laurel St			Laurel St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
7:15 AM	2	3	0	0	1	1	0	0	0	0	1	0	8	0			
7:30 AM	0	2	0	0	1	0	0	2	0	0	1	1	7	0			
7:45 AM	0	0	0	0	2	2	0	2	0	1	0	0	7	23			
8:00 AM	1	1	1	0	2	0	0	2	0	0	0	0	7	29			
8:15 AM	0	2	0	0	1	1	0	0	0	0	0	0	4	25			
8:30 AM	0	2	0	0	3	1	0	2	1	0	0	1	10	28			
8:45 AM	1	1	0	0	2	0	0	2	0	0	0	0	6	27			
Count Total	4	11	1	0	12	5	0	10	1	1	3	2	50	0			
Peak Hour	2	6	1	0	8	2	0	6	1	0	0	1	27	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	3	97	1	0	9	73	7	0	9	9	5	0	7	10	4	234	0
4:15 PM		0	3	100	2	0	5	83	3	0	10	14	5	0	11	11	4	251	0
4:30 PM		0	5	101	5	0	8	92	7	0	5	9	6	0	7	16	7	268	0
4:45 PM		0	7	88	0	0	8	93	8	0	8	16	9	0	8	10	7	262	1,015
5:00 PM		0	10	96	4	0	7	106	9	0	9	9	9	0	12	12	3	286	1,067
5:15 PM		0	6	100	8	0	4	88	6	0	4	17	8	0	8	16	9	274	1,090
5:30 PM		0	5	101	6	0	6	97	14	0	6	16	6	0	13	8	4	282	1,104
5:45 PM		0	13	96	6	0	8	70	11	0	5	15	9	0	9	10	5	257	1,099
Count Total		0	52	779	32	0	55	702	65	0	56	105	57	0	75	93	43	2,114	0
Peak Hour	All	0	28	385	18	0	25	384	37	0	27	58	32	0	41	46	23	1,104	0
	HV	0	0	7	0	0	0	3	2	0	0	3	0	0	2	5	7	29	0
	HV%	-	0%	2%	0%	-	0%	1%	5%	-	0%	5%	0%	-	5%	11%	30%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	2	2	6	4	3	4	2	13	1	20	1	7	29
4:15 PM	3	0	1	3	7	5	2	6	4	17	1	33	3	7	44
4:30 PM	3	1	1	4	9	2	1	4	4	11	0	23	0	4	27
4:45 PM	5	2	2	4	13	5	2	6	6	19	1	26	0	7	34
5:00 PM	1	2	1	4	8	3	7	3	6	19	2	29	2	13	46
5:15 PM	0	1	0	3	4	5	2	8	7	22	1	44	2	7	54
5:30 PM	1	0	0	3	4	8	4	2	10	24	1	21	0	13	35
5:45 PM	1	1	3	3	8	1	2	4	6	13	0	34	0	8	42
Count Total	16	7	10	26	59	33	23	37	45	138	7	230	8	66	311
Peak Hour	7	5	3	14	29	21	15	19	29	84	5	120	4	40	169

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	0	0	0	0	2	0	0	0	1	1	6	0
4:15 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	2	7	0
4:30 PM	0	0	3	0	0	0	1	0	0	0	1	0	0	0	2	2	9	0
4:45 PM	0	0	5	0	0	0	1	1	0	0	2	0	0	0	1	3	13	35
5:00 PM	0	0	1	0	0	0	1	1	0	0	1	0	0	2	1	1	8	37
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	4	34
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	4	29
5:45 PM	0	0	1	0	0	0	0	1	0	0	3	0	0	0	1	2	8	24
Count Total	0	0	16	0	0	0	4	3	0	0	10	0	0	2	10	14	59	0
Peak Hour	0	0	7	0	0	0	3	2	0	0	3	0	0	2	5	7	29	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	3	1	1	0	2	0	4	0	0	1	1	13	0				
4:15 PM	1	4	0	0	1	1	0	6	0	1	3	0	17	0				
4:30 PM	1	1	0	0	1	0	0	3	1	1	2	1	11	0				
4:45 PM	1	4	0	0	2	0	0	5	1	1	4	1	19	60				
5:00 PM	0	2	1	0	4	3	0	3	0	0	6	0	19	66				
5:15 PM	2	2	1	0	1	1	0	7	1	3	3	1	22	71				
5:30 PM	3	4	1	1	2	1	0	1	1	1	8	1	24	84				
5:45 PM	0	1	0	0	1	1	0	4	0	0	6	0	13	78				
Count Total	8	21	4	2	12	9	0	33	4	7	33	5	138	0				
Peak Hour	6	12	3	1	9	5	0	16	3	5	21	3	84	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Traffic Data Service

San Jose, CA
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tdsbay@cs.com

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 2/2/2023
Page No : 1

Groups Printed- Lights - Buses - Trucks

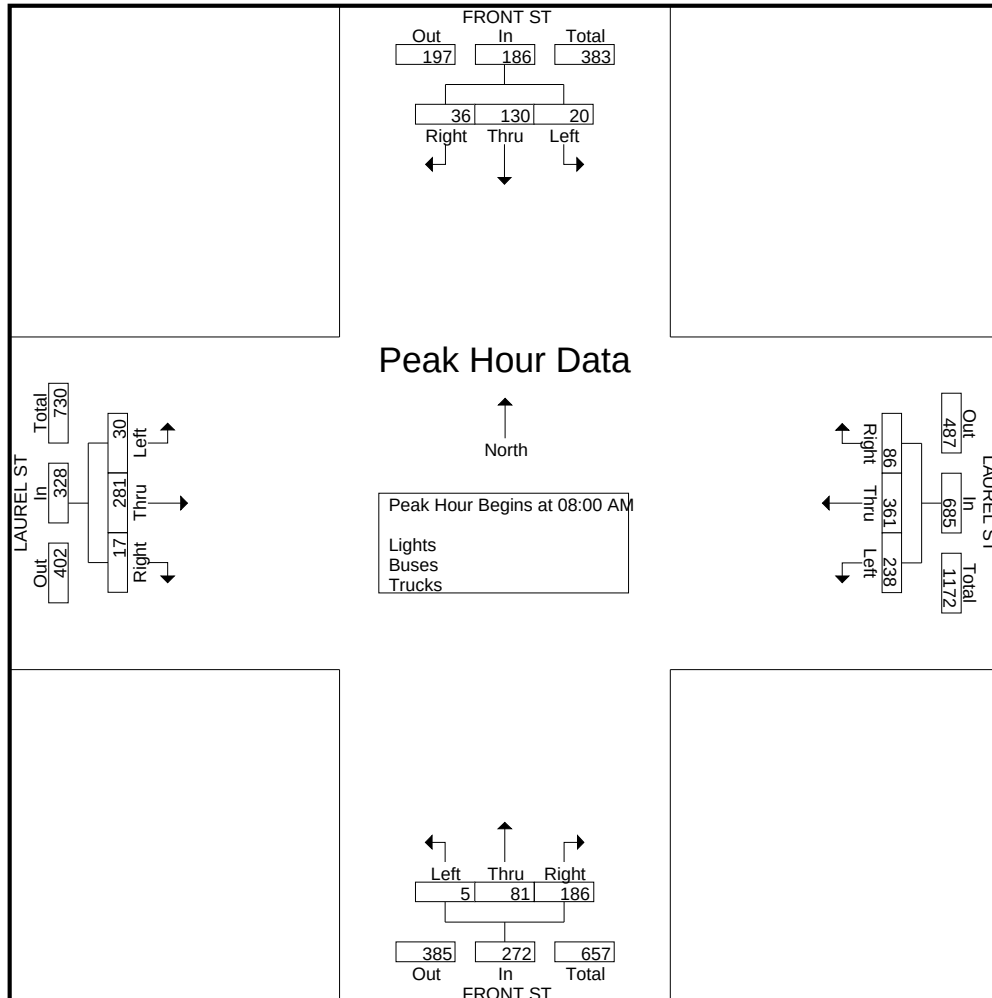
	FRONT ST Southbound					LAUREL ST Westbound					FRONT ST Northbound					LAUREL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	10	0	1	12	10	35	23	5	73	14	7	1	1	23	2	25	2	0	29	137
07:15 AM	4	12	1	0	17	6	51	15	4	76	18	9	1	3	31	2	27	4	0	33	157
07:30 AM	5	8	4	0	17	15	65	31	4	115	27	9	1	0	37	1	37	1	0	39	208
07:45 AM	9	16	2	3	30	17	99	44	6	166	30	14	1	3	48	3	60	3	1	67	311
Total	19	46	7	4	76	48	250	113	19	430	89	39	4	7	139	8	149	10	1	168	813
08:00 AM	5	26	2	0	33	14	98	57	3	172	35	12	0	2	49	3	49	9	0	61	315
08:15 AM	8	29	5	0	42	17	108	72	11	208	56	25	2	1	84	5	62	6	0	73	407
08:30 AM	10	40	5	0	55	21	77	65	2	165	60	16	2	4	82	3	98	6	0	107	409
08:45 AM	13	35	8	1	57	34	78	44	5	161	35	28	1	1	65	6	72	9	0	87	370
Total	36	130	20	1	187	86	361	238	21	706	186	81	5	8	280	17	281	30	0	328	1501
Grand Total	55	176	27	5	263	134	611	351	40	1136	275	120	9	15	419	25	430	40	1	496	2314
Apprch %	20.9	66.9	10.3	1.9		11.8	53.8	30.9	3.5		65.6	28.6	2.1	3.6		5	86.7	8.1	0.2		
Total %	2.4	7.6	1.2	0.2	11.4	5.8	26.4	15.2	1.7	49.1	11.9	5.2	0.4	0.6	18.1	1.1	18.6	1.7	0	21.4	
Lights	50	164	24	5	243	130	598	345	40	1113	272	118	8	15	413	24	423	38	1	486	2255
% Lights	90.9	93.2	88.9	100	92.4	97	97.9	98.3	100	98	98.9	98.3	88.9	100	98.6	96	98.4	95	100	98	97.5
Buses	0	3	2	0	5	2	2	1	0	5	0	1	0	0	1	0	2	1	0	3	14
% Buses	0	1.7	7.4	0	1.9	1.5	0.3	0.3	0	0.4	0	0.8	0	0	0.2	0	0.5	2.5	0	0.6	0.6
Trucks	5	9	1	0	15	2	11	5	0	18	3	1	1	0	5	1	5	1	0	7	45
% Trucks	9.1	5.1	3.7	0	5.7	1.5	1.8	1.4	0	1.6	1.1	0.8	11.1	0	1.2	4	1.2	2.5	0	1.4	1.9

	FRONT ST Southbound				LAUREL ST Westbound				FRONT ST Northbound				LAUREL ST Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	5	26	2	33	14	98	57	169	35	12	0	47	3	49	9	61	310
08:15 AM	8	29	5	42	17	108	72	197	56	25	2	83	5	62	6	73	395
08:30 AM	10	40	5	55	21	77	65	163	60	16	2	78	3	98	6	107	403
08:45 AM	13	35	8	56	34	78	44	156	35	28	1	64	6	72	9	87	363
Total Volume	36	130	20	186	86	361	238	685	186	81	5	272	17	281	30	328	1471
% App. Total	19.4	69.9	10.8		12.6	52.7	34.7		68.4	29.8	1.8		5.2	85.7	9.1		
PHF	.692	.813	.625	.830	.632	.836	.826	.869	.775	.723	.625	.819	.708	.717	.833	.766	.913

Traffic Data Service

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File Name : 1AM FINAL
Site Code : 00000001
Start Date : 2/2/2023
Page No : 2



Traffic Data Service

San Jose, CA
(408) 622-4787
tdsbay@cs.com

File Name : 1PM FINAL
Site Code : 00000001
Start Date : 2/2/2023
Page No : 1

Groups Printed- Lights - Buses - Trucks

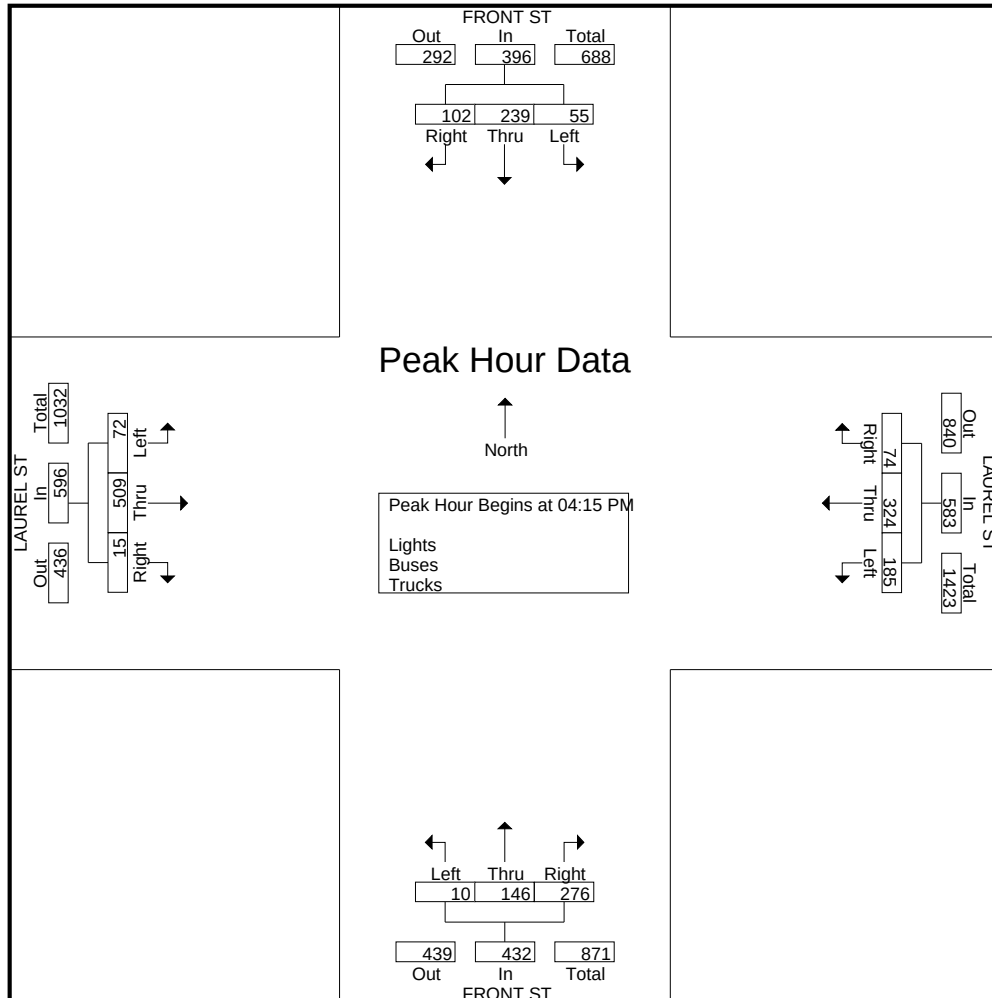
	FRONT ST Southbound					LAUREL ST Westbound					FRONT ST Northbound					LAUREL ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	16	63	10	1	90	15	78	51	7	151	81	35	0	10	126	2	119	14	1	136	503
04:15 PM	18	55	9	0	82	19	78	63	15	175	62	47	3	13	125	1	131	20	0	152	534
04:30 PM	32	56	13	0	101	17	85	33	4	139	75	43	3	5	126	5	136	21	0	162	528
04:45 PM	19	72	14	0	105	16	96	45	12	169	71	23	3	4	101	4	114	12	0	130	505
Total	85	246	46	1	378	67	337	192	38	634	289	148	9	32	478	12	500	67	1	580	2070
05:00 PM	33	56	19	0	108	22	65	44	12	143	68	33	1	14	116	5	128	19	0	152	519
05:15 PM	30	53	16	0	99	10	92	52	8	162	45	24	5	4	78	6	139	10	0	155	494
05:30 PM	20	60	13	0	93	30	81	45	11	167	65	29	1	10	105	7	132	19	0	158	523
05:45 PM	17	56	11	0	84	20	96	39	5	160	64	38	1	7	110	2	109	17	0	128	482
Total	100	225	59	0	384	82	334	180	36	632	242	124	8	35	409	20	508	65	0	593	2018
Grand Total	185	471	105	1	762	149	671	372	74	1266	531	272	17	67	887	32	1008	132	1	1173	4088
Apprch %	24.3	61.8	13.8	0.1		11.8	53	29.4	5.8		59.9	30.7	1.9	7.6		2.7	85.9	11.3	0.1		
Total %	4.5	11.5	2.6	0	18.6	3.6	16.4	9.1	1.8	31	13	6.7	0.4	1.6	21.7	0.8	24.7	3.2	0	28.7	
Lights	184	469	103	1	757	149	664	371	74	1258	526	269	17	67	879	32	1006	129	1	1168	4062
% Lights	99.5	99.6	98.1	100	99.3	100	99	99.7	100	99.4	99.1	98.9	100	100	99.1	100	99.8	97.7	100	99.6	99.4
Buses	1	0	2	0	3	0	4	0	0	4	1	2	0	0	3	0	1	3	0	4	14
% Buses	0.5	0	1.9	0	0.4	0	0.6	0	0	0.3	0.2	0.7	0	0	0.3	0	0.1	2.3	0	0.3	0.3
Trucks	0	2	0	0	2	0	3	1	0	4	4	1	0	0	5	0	1	0	0	1	12
% Trucks	0	0.4	0	0	0.3	0	0.4	0.3	0	0.3	0.8	0.4	0	0	0.6	0	0.1	0	0	0.1	0.3

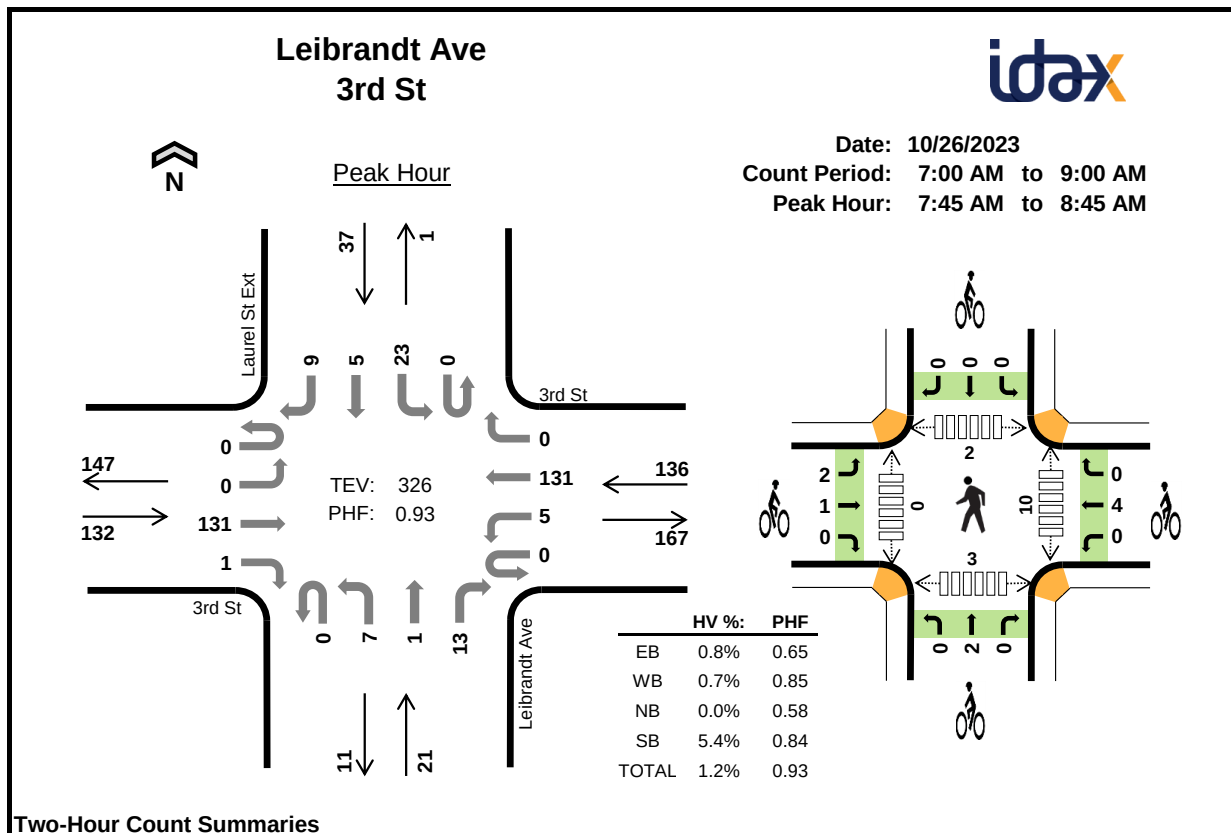
	FRONT ST Southbound					LAUREL ST Westbound					FRONT ST Northbound					LAUREL ST Eastbound					
Start Time	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	18	55	9	82		19	78	63	160		62	47	3	112		1	131	20	152		506
04:30 PM	32	56	13	101		17	85	33	135		75	43	3	121		5	136	21	162		519
04:45 PM	19	72	14	105		16	96	45	157		71	23	3	97		4	114	12	130		489
05:00 PM	33	56	19	108		22	65	44	131		68	33	1	102		5	128	19	152		493
Total Volume	102	239	55	396		74	324	185	583		276	146	10	432		15	509	72	596		2007
% App. Total	25.8	60.4	13.9			12.7	55.6	31.7			63.9	33.8	2.3			2.5	85.4	12.1			
PHF	.773	.830	.724	.917		.841	.844	.734	.911		.920	.777	.833	.893		.750	.936	.857	.920		.967

Traffic Data Service

San Jose, CA
(408) 622-4787
tdsbay@cs.com

File Name : 1PM FINAL
Site Code : 00000001
Start Date : 2/2/2023
Page No : 2



**Two-Hour Count Summaries**

Interval Start		3rd St				3rd St				Leibrandt Ave				Laurel St Ext				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	8	0	0	0	15	0	0	0	0	5	0	0	1	0	29	0
7:15 AM		0	0	19	2	0	0	10	0	0	1	0	3	0	0	0	1	36	0
7:30 AM		0	0	22	0	0	2	17	0	0	1	0	3	0	3	1	0	49	0
7:45 AM		0	0	30	0	0	2	28	0	0	1	0	3	0	3	4	3	74	188
8:00 AM		0	0	22	0	0	0	40	0	0	3	0	6	0	9	1	1	82	241
8:15 AM		0	0	28	1	0	1	37	0	0	2	1	4	0	5	0	3	82	287
8:30 AM		0	0	51	0	0	2	26	0	0	1	0	0	0	6	0	2	88	326
8:45 AM		0	0	29	0	0	2	35	0	0	2	1	1	0	1	1	2	74	326
Count Total		0	0	209	3	0	9	208	0	0	11	2	25	0	27	8	12	514	0
Peak Hour	All	0	0	131	1	0	5	131	0	0	7	1	13	0	23	5	9	326	0
	HV	0	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	4	0
	HV%	-	-	1%	0%	-	0%	1%	-	-	0%	0%	0%	-	9%	0%	0%	1%	0

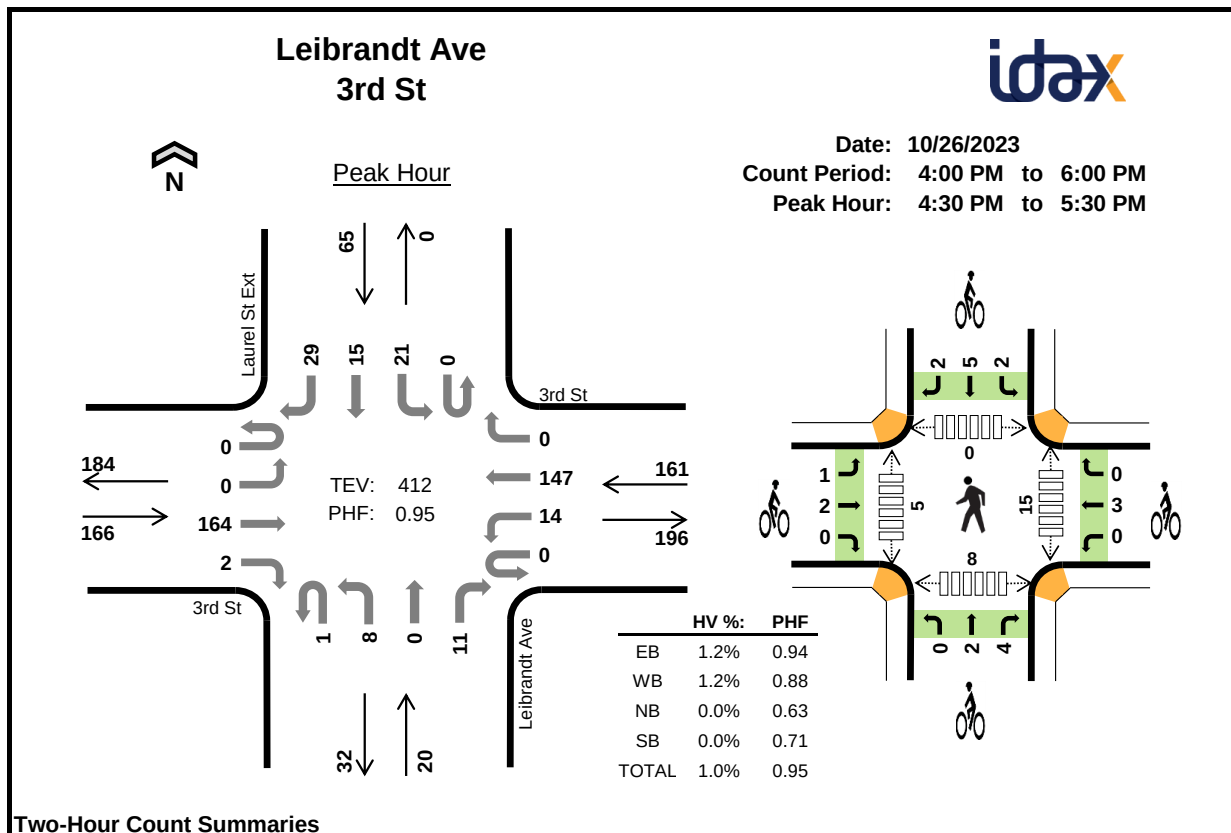
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	1	1	5
7:15 AM	3	0	0	1	4	0	0	0	0	0	0	1	0	1	2
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	2	0	1	0	3	5	0	0	1	6
8:00 AM	0	1	0	1	2	1	1	0	0	2	3	0	1	0	4
8:15 AM	0	0	0	1	1	0	3	1	0	4	1	0	0	2	3
8:30 AM	1	0	0	0	1	0	0	0	0	0	1	0	1	0	2
8:45 AM	0	1	0	0	1	0	2	0	0	2	2	0	0	1	3
Count Total	4	3	0	3	10	3	6	2	0	11	15	2	3	6	26
Peak Hour	1	1	0	2	4	3	4	2	0	9	10	0	2	3	15

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	3rd St				3rd St				Leibrandt Ave				Laurel St Ext				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
7:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	4	0	0	0	3	0	0	0	0	0	0	2	0	1	10	0
Peak Hour	0	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	4	0

Two-Hour Count Summaries - Bikes																		
Interval Start	3rd St			3rd St			Leibrandt Ave			Laurel St Ext			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:45 AM	1	1	0	0	0	0	0	1	0	0	0	0	3	3				
8:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	2	5				
8:15 AM	0	0	0	0	3	0	0	1	0	0	0	0	4	9				
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	9				
8:45 AM	0	0	0	0	1	1	0	0	0	0	0	0	2	8				
Count Total	2	1	0	0	5	1	0	2	0	0	0	0	11	0				
Peak Hour	2	1	0	0	4	0	0	2	0	0	0	0	9	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		3rd St				3rd St				Leibrandt Ave				Laurel St Ext				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	46	0	0	1	29	0	0	0	0	2	0	14	2	5	99	0
4:15 PM		0	0	47	1	0	1	29	0	0	3	0	3	0	3	2	8	97	0
4:30 PM		0	0	39	1	0	4	33	0	0	1	0	2	0	4	6	7	97	0
4:45 PM		0	0	41	0	0	1	45	0	0	2	0	2	0	5	1	4	101	394
5:00 PM		0	0	43	1	0	3	39	0	0	4	0	1	0	5	3	7	106	401
5:15 PM		0	0	41	0	0	6	30	0	1	1	0	6	0	7	5	11	108	412
5:30 PM		0	0	29	1	0	3	34	0	0	1	0	5	0	2	2	9	86	401
5:45 PM		0	0	51	3	0	1	35	0	0	2	0	2	0	8	1	3	106	406
Count Total		0	0	337	7	0	20	274	0	1	14	0	23	0	48	22	54	800	0
Peak Hour	All	0	0	164	2	0	14	147	0	1	8	0	11	0	21	15	29	412	0
	HV	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
	HV%	-	-	1%	0%	-	0%	1%	-	0%	0%	-	0%	-	0%	0%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	0	1	0	1	0	3	4	5	0	0	0	5
4:15 PM	0	0	0	1	1	1	0	1	0	2	2	3	3	2	10
4:30 PM	1	0	0	0	1	2	0	1	3	6	4	0	0	4	8
4:45 PM	0	2	0	0	2	0	0	1	3	4	4	1	0	4	9
5:00 PM	0	0	0	0	0	1	2	1	2	6	3	1	0	0	4
5:15 PM	1	0	0	0	1	0	1	3	1	5	4	3	0	0	7
5:30 PM	1	0	0	0	1	1	0	0	3	4	7	1	0	0	8
5:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	1	1
Count Total	3	2	1	1	7	5	6	7	15	33	29	9	3	11	52
Peak Hour	2	2	0	0	4	3	3	6	9	21	15	5	0	8	28

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	3rd St				3rd St				Leibrandt Ave				Laurel St Ext				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	2	1	0	0	2	0	0	0	0	1	0	0	1	0	0	7	0
Peak Hour	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0

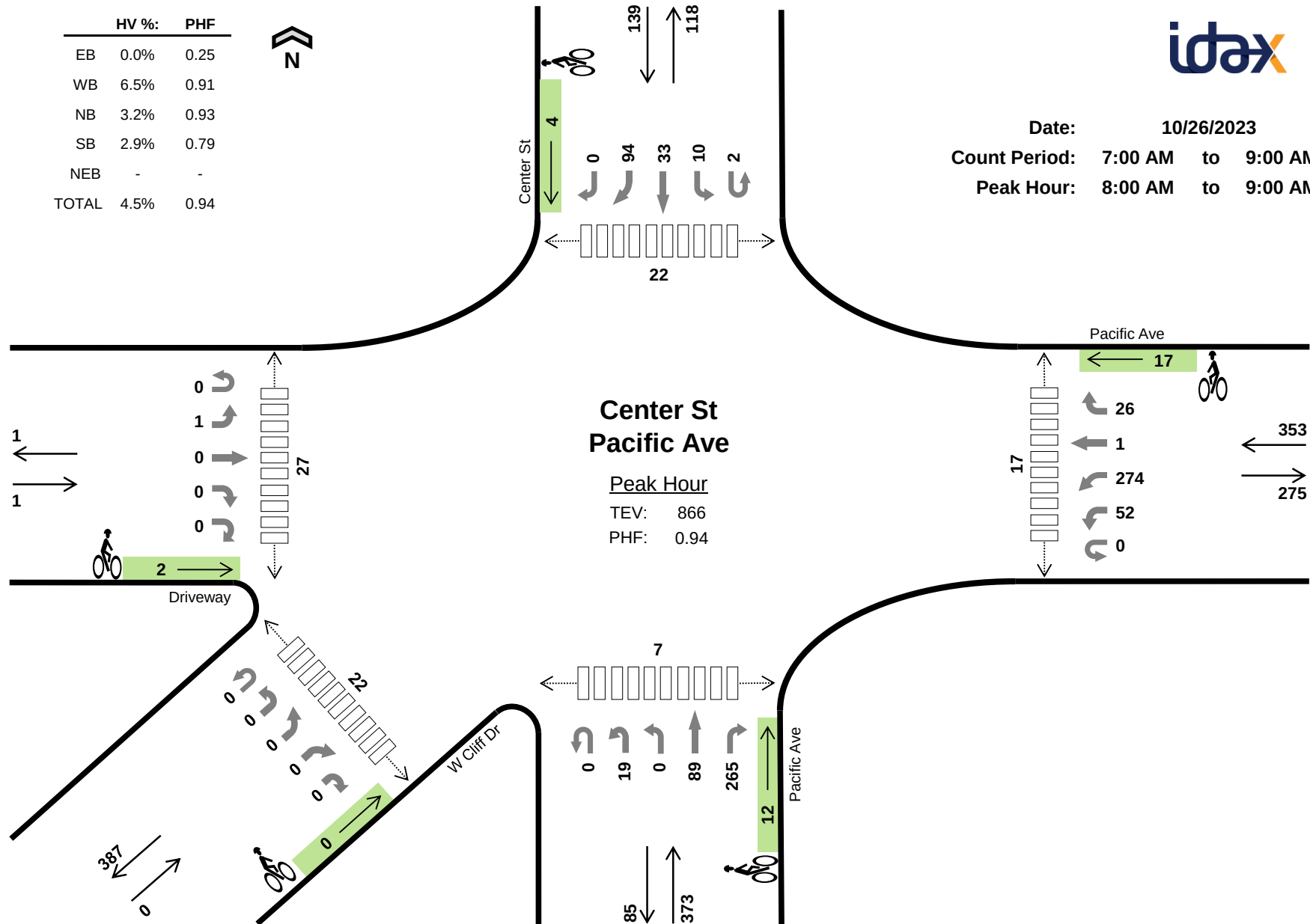
Two-Hour Count Summaries - Bikes																	
Interval Start	3rd St			3rd St			Leibrandt Ave			Laurel St Ext			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	1	0	0	0	0	1	2	0	4	0			
4:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2	0			
4:30 PM	0	2	0	0	0	0	0	1	0	1	0	2	6	0			
4:45 PM	0	0	0	0	0	0	0	0	1	0	3	0	4	16			
5:00 PM	1	0	0	0	2	0	0	1	0	1	1	0	6	18			
5:15 PM	0	0	0	0	1	0	0	0	3	0	1	0	5	21			
5:30 PM	0	1	0	0	0	0	0	0	0	1	2	0	4	19			
5:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	17			
Count Total	1	4	0	2	4	0	0	2	5	4	9	2	33	0			
Peak Hour	1	2	0	0	3	0	0	2	4	2	5	2	21	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Date: 10/26/2023
 Count Period: 7:00 AM to 9:00 AM
 Peak Hour: 8:00 AM to 9:00 AM

	HV %:	PHF
EB	0.0%	0.25
WB	6.5%	0.91
NB	3.2%	0.93
SB	2.9%	0.79
NEB	-	-
TOTAL	4.5%	0.94



Two-Hour Count Summaries

Interval Start	Driveway Eastbound					Pacific Ave Westbound					Pacific Ave Northbound					Center St Southbound					W Cliff Dr Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	8	24	0	2	0	1	0	8	21	0	0	5	10	0	0	0	0	0	0	79	0
7:15 AM	0	0	0	0	0	0	6	21	0	5	0	5	0	20	16	0	1	5	3	0	0	0	0	0	0	82	0
7:30 AM	0	0	0	0	0	1	5	38	1	2	0	2	0	11	41	0	1	3	4	0	0	0	0	0	0	109	0
7:45 AM	0	0	0	0	0	0	6	46	2	2	0	1	0	16	53	0	2	4	12	0	0	0	0	0	0	144	414
8:00 AM	0	0	0	0	0	0	6	81	1	9	0	4	0	26	48	0	0	7	19	0	0	0	0	0	0	201	536
8:15 AM	0	1	0	0	0	0	9	72	0	5	0	5	0	22	72	1	2	11	30	0	0	0	0	0	0	230	684
8:30 AM	0	0	0	0	0	0	20	47	0	7	0	6	0	25	69	0	3	7	27	0	0	0	0	0	0	211	786
8:45 AM	0	0	0	0	0	0	17	74	0	5	0	4	0	16	76	1	5	8	18	0	0	0	0	0	0	224	866
Count Total	0	1	0	0	0	1	77	403	4	37	0	28	0	144	396	2	14	50	123	0	0	0	0	0	0	1,280	0
Peak Hour	All	0	1	0	0	0	52	274	1	26	0	19	0	89	265	2	10	33	94	0	0	0	0	0	0	866	0
	HV	0	0	0	0	0	10	12	0	1	0	1	0	1	10	0	0	3	1	0	0	0	0	0	0	39	0
	HV%	-	0%	-	-	-	19%	4%	0%	4%	-	5%	-	1%	4%	0%	0%	9%	1%	-	-	-	-	-	-	5%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
7:00 AM	0	3	1	0	0	4	0	2	2	0	0	4	1	4	1	0	1	7
7:15 AM	0	3	3	1	0	7	0	4	2	1	0	7	2	2	2	1	1	8
7:30 AM	0	6	6	1	0	13	0	3	1	0	0	4	9	4	3	6	4	26
7:45 AM	0	2	6	0	0	8	0	3	1	1	0	5	4	7	4	4	8	27
8:00 AM	0	4	2	0	0	6	0	4	2	1	0	7	3	7	5	2	8	25
8:15 AM	0	5	4	0	0	9	0	2	3	0	0	5	1	4	0	0	2	7
8:30 AM	0	7	2	3	0	12	1	4	3	0	0	8	7	10	9	5	6	37
8:45 AM	0	7	4	1	0	12	1	7	4	3	0	15	6	6	8	0	6	26
Count Total	0	37	28	6	0	71	2	29	18	6	0	55	33	44	32	18	36	163
Peak Hr	0	23	12	4	0	39	2	17	12	4	0	35	17	27	22	7	22	95

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Driveway Eastbound					Pacific Ave Westbound					Pacific Ave Northbound					Center St Southbound					W Cliff Dr Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	0	0	0	0	1	2	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	7	0
7:30 AM	0	0	0	0	0	1	2	3	0	0	0	1	0	1	4	0	0	1	0	0	0	0	0	0	0	13	0
7:45 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	8	32
8:00 AM	0	0	0	0	0	0	1	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	34
8:15 AM	0	0	0	0	0	0	2	3	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	36
8:30 AM	0	0	0	0	0	0	5	2	0	0	0	0	0	1	1	0	0	2	1	0	0	0	0	0	0	12	35
8:45 AM	0	0	0	0	0	0	2	4	0	1	0	1	0	0	3	0	0	1	0	0	0	0	0	0	0	12	39
Count Total	0	0	0	0	0	1	15	19	1	1	0	2	0	6	20	0	0	5	1	0	0	0	0	0	0	71	0
Peak Hour	0	0	0	0	0	0	10	12	0	1	0	1	0	1	10	0	0	3	1	0	0	0	0	0	0	39	0

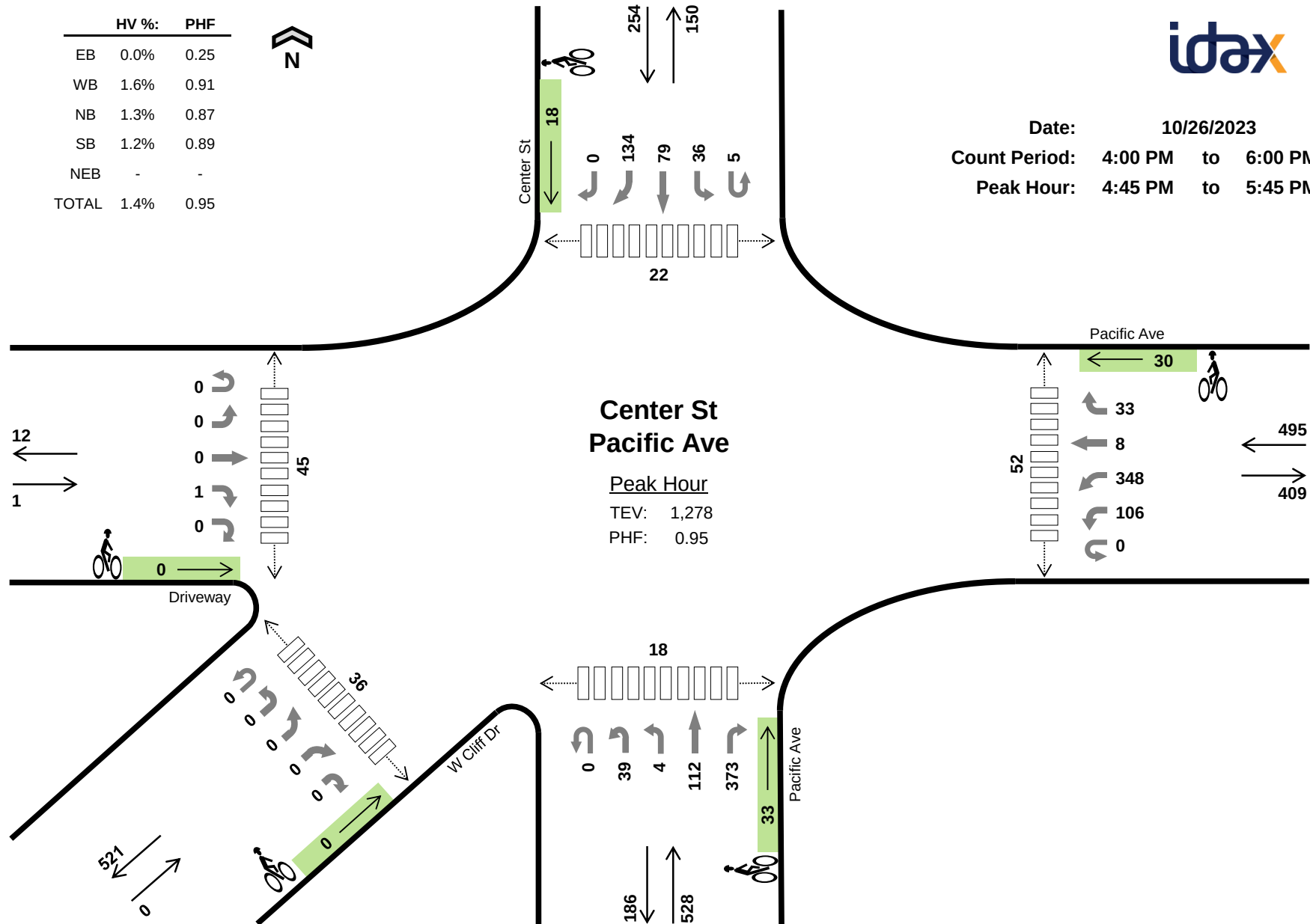
Two-Hour Count Summaries - Bikes

Interval Start	Driveway Eastbound					Pacific Ave Westbound					Pacific Ave Northbound					Center St Southbound					W Cliff Dr Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	0	0	0	0	1	3	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	7	0
7:30 AM	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0
7:45 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	5	20
8:00 AM	0	0	0	0	0	0	1	3	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	7	23
8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	5	21
8:30 AM	0	0	1	0	0	0	0	4	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	8	25
8:45 AM	0	0	1	0	0	0	1	4	1	1	0	0	1	2	1	0	0	0	3	0	0	0	0	0	0	15	35
Count Total	0	0	2	0	0	0	3	23	2	1	0	1	2	8	7	0	0	2	4	0	0	0	0	0	0	55	0
Peak Hour	0	0	2	0	0	0	2	13	1	1	0	0	1	6	5	0	0	1	3	0	0	0	0	0	0	35	0



Date: 10/26/2023
 Count Period: 4:00 PM to 6:00 PM
 Peak Hour: 4:45 PM to 5:45 PM

	HV %:	PHF
EB	0.0%	0.25
WB	1.6%	0.91
NB	1.3%	0.87
SB	1.2%	0.89
NEB	-	-
TOTAL	1.4%	0.95



Two-Hour Count Summaries

Interval Start	Driveway Eastbound					Pacific Ave Westbound					Pacific Ave Northbound					Center St Southbound					W Cliff Dr Northeastbound					15-min Total	Rolling One Hour	
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR			
4:00 PM	0	0	0	0	0	0	19	81	1	5	0	9	2	25	103	0	16	21	24	1	0	0	0	0	0	307	0	
4:15 PM	0	0	0	0	0	0	22	67	3	5	0	6	0	30	112	1	10	20	31	0	0	0	0	0	0	307	0	
4:30 PM	0	0	1	0	0	1	22	72	2	15	1	10	1	21	115	0	8	19	34	0	0	0	0	0	0	322	0	
4:45 PM	0	0	0	0	0	0	24	76	1	11	0	9	0	26	99	2	8	20	37	0	0	0	0	0	0	313	1,249	
5:00 PM	0	0	0	0	0	0	22	86	3	5	0	11	2	25	78	1	11	25	29	0	0	0	0	0	0	298	1,240	
5:15 PM	0	0	0	1	0	0	30	98	1	7	0	12	1	33	105	0	7	11	32	0	0	0	0	0	0	338	1,271	
5:30 PM	0	0	0	0	0	0	30	88	3	10	0	7	1	28	91	2	10	23	36	0	0	0	0	0	0	329	1,278	
5:45 PM	0	0	0	0	0	0	20	85	1	8	0	3	3	23	100	0	6	23	27	0	0	0	0	0	0	299	1,264	
Count Total	0	0	1	1	0	1	189	653	15	66	1	67	10	211	803	6	76	162	250	1	0	0	0	0	0	2,513	0	
Peak Hour	All	0	0	0	1	0	0	106	348	8	33	0	39	4	112	373	5	36	79	134	0	0	0	0	0	0	1,278	0
	HV	0	0	0	0	0	0	6	2	0	0	0	0	0	7	0	2	0	1	0	0	0	0	0	0	18	0	
	HV%	-	-	-	0%	-	-	6%	1%	0%	0%	-	0%	0%	0%	2%	0%	6%	0%	1%	-	-	-	-	-	1%	0	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
4:00 PM	0	2	5	1	0	8	1	9	3	2	0	15	8	11	2	3	9	33
4:15 PM	0	3	2	0	0	5	0	4	8	1	0	13	9	7	4	4	7	31
4:30 PM	0	6	3	0	0	9	0	1	7	4	0	12	15	7	11	3	7	43
4:45 PM	0	1	2	1	0	4	0	6	7	7	0	20	8	15	6	7	12	48
5:00 PM	0	1	1	0	0	2	0	4	7	8	0	19	13	11	7	4	10	45
5:15 PM	0	2	2	1	0	5	0	10	6	2	0	18	13	12	7	4	8	44
5:30 PM	0	4	2	1	0	7	0	10	13	1	0	24	18	7	2	3	6	36
5:45 PM	0	1	2	2	0	5	1	6	4	3	0	14	11	18	8	7	17	61
Count Total	0	20	19	6	0	45	2	50	55	28	0	135	95	88	47	35	76	341
Peak Hr	0	8	7	3	0	18	0	30	33	18	0	81	52	45	22	18	36	173

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Driveway					Pacific Ave					Pacific Ave					Center St					W Cliff Dr					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northeastbound						
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	5	0	1	0	0	0	0	0	0	0	0	8	0
4:15 PM	0	0	0	0	0	0	1	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5	0
4:30 PM	0	0	0	0	0	0	2	4	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	9	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	4	26
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	20
5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	5	20
5:30 PM	0	0	0	0	0	0	3	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	7	18
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	5	19
Count Total	0	0	0	0	0	0	12	8	0	0	0	1	0	1	17	0	5	0	1	0	0	0	0	0	0	45	0
Peak Hour	0	0	0	0	0	0	6	2	0	0	0	0	0	0	7	0	2	0	1	0	0	0	0	0	0	18	0

Two-Hour Count Summaries - Bikes

Interval Start	Driveway Eastbound					Pacific Ave Westbound					Pacific Ave Northbound					Center St Southbound					W Cliff Dr Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	1	0	0	0	9	0	0	0	0	0	2	1	0	0	0	2	0	0	0	0	0	0	15	0
4:15 PM	0	0	0	0	0	0	0	3	0	1	0	2	0	0	6	0	0	1	0	0	0	0	0	0	0	13	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	2	5	0	0	0	4	0	0	0	0	0	0	12	0
4:45 PM	0	0	0	0	0	0	1	5	0	0	0	0	0	1	6	0	0	2	5	0	0	0	0	0	0	20	60
5:00 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	1	6	0	0	4	4	0	0	0	0	0	0	19	64
5:15 PM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	6	0	0	0	2	0	0	0	0	0	0	18	69
5:30 PM	0	0	0	0	0	0	0	10	0	0	0	0	0	5	8	0	0	0	1	0	0	0	0	0	0	24	81
5:45 PM	0	0	0	1	0	0	0	6	0	0	0	0	0	2	2	0	0	0	3	0	0	0	0	0	0	14	75
Count Total	0	0	0	2	0	0	1	48	0	1	0	2	0	13	40	0	0	7	21	0	0	0	0	0	0	135	0
Peak Hour	0	0	0	0	0	0	1	29	0	0	0	0	0	7	26	0	0	6	12	0	0	0	0	0	0	81	0



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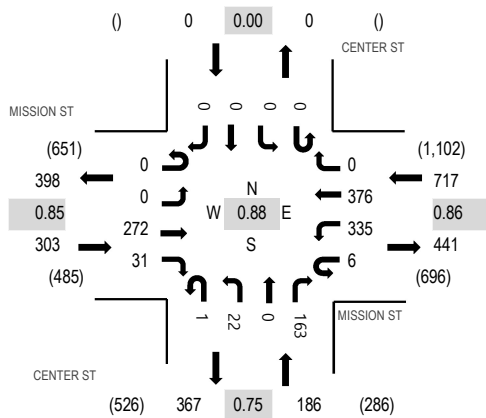
Location: 6 CENTER ST & MISSION ST AM

Date: Tuesday, April 25, 2023

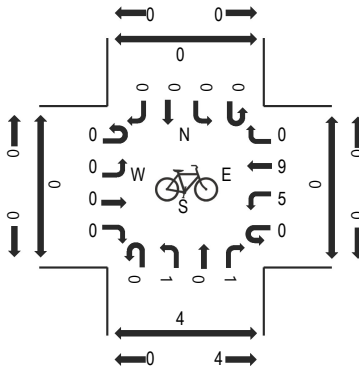
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

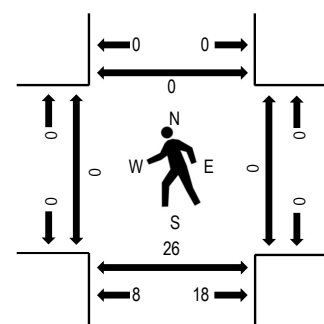
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MISSION ST Eastbound				MISSION ST Westbound				CENTER ST Northbound				CENTER ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	25	3	0	19	31	0	0	1	0	13	0	0	0	0	92	667	0	2	2	0
7:15 AM	0	0	21	0	1	24	48	0	0	3	0	10	0	0	0	0	107	860	0	0	3	0
7:30 AM	0	0	54	5	2	43	70	0	0	8	0	19	0	0	0	0	201	1,095	0	1	1	0
7:45 AM	0	0	68	6	0	59	88	0	0	4	0	42	0	0	0	0	267	1,162	0	0	2	0
8:00 AM	0	0	56	10	2	85	100	0	0	6	0	26	0	0	0	0	285	1,206	0	0	5	0
8:15 AM	0	0	79	6	3	109	97	0	0	5	0	43	0	0	0	0	342		0	0	6	0
8:30 AM	0	0	60	3	1	58	83	0	0	5	0	58	0	0	0	0	268		0	0	9	0
8:45 AM	0	0	77	12	0	83	96	0	1	6	0	36	0	0	0	0	311		0	0	6	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	265	30	6	332	371	0	1	20	0	162	0	0	0	0	1,187
Mediums	0	0	7	1	0	3	5	0	0	2	0	1	0	0	0	0	19
Total	0	0	272	31	6	335	376	0	1	22	0	163	0	0	0	0	1,206



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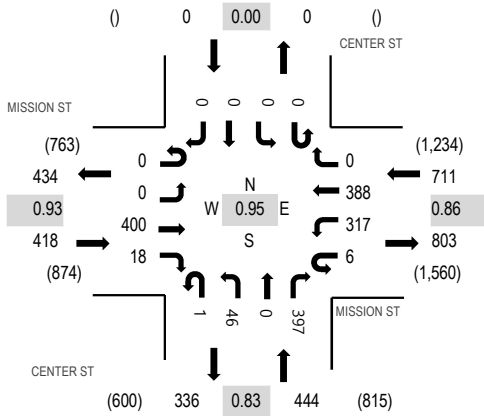
Location: 6 CENTER ST & MISSION ST PM

Date: Tuesday, April 25, 2023

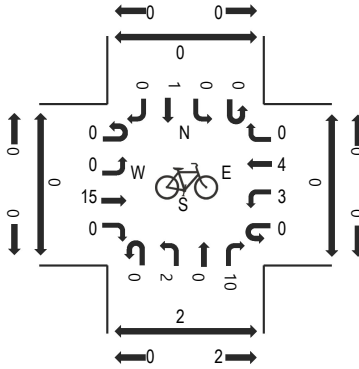
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

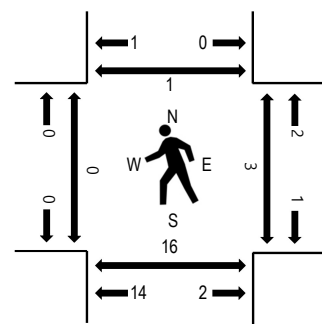
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MISSION ST Eastbound				MISSION ST Westbound				CENTER ST Northbound				CENTER ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	100	7	1	58	91	0	0	11	0	123	0	0	0	0	391	1,573	0	0	4	0
4:15 PM	0	0	105	5	1	100	108	0	0	12	0	82	0	0	0	0	413	1,570	0	0	3	0
4:30 PM	0	0	93	2	2	82	77	0	0	12	0	101	0	0	0	0	369	1,487	0	2	2	1
4:45 PM	0	0	102	4	2	77	112	0	1	11	0	91	0	0	0	0	400	1,457	0	1	7	0
5:00 PM	0	0	98	13	0	79	83	0	0	11	0	104	0	0	0	0	388	1,350	0	0	3	0
5:15 PM	0	0	110	8	2	51	76	0	0	9	0	74	0	0	0	0	330		0	0	3	0
5:30 PM	0	0	116	8	0	55	62	0	0	16	0	82	0	0	0	0	339		0	6	3	0
5:45 PM	0	0	101	2	0	48	67	0	0	5	0	70	0	0	0	0	293		0	0	1	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	0	393	18	6	317	387	0	1	45	0	396	0	0	0	0	1,563
Mediums	0	0	6	0	0	0	1	0	0	1	0	1	0	0	0	0	9
Total	0	0	400	18	6	317	388	0	1	46	0	397	0	0	0	0	1,573



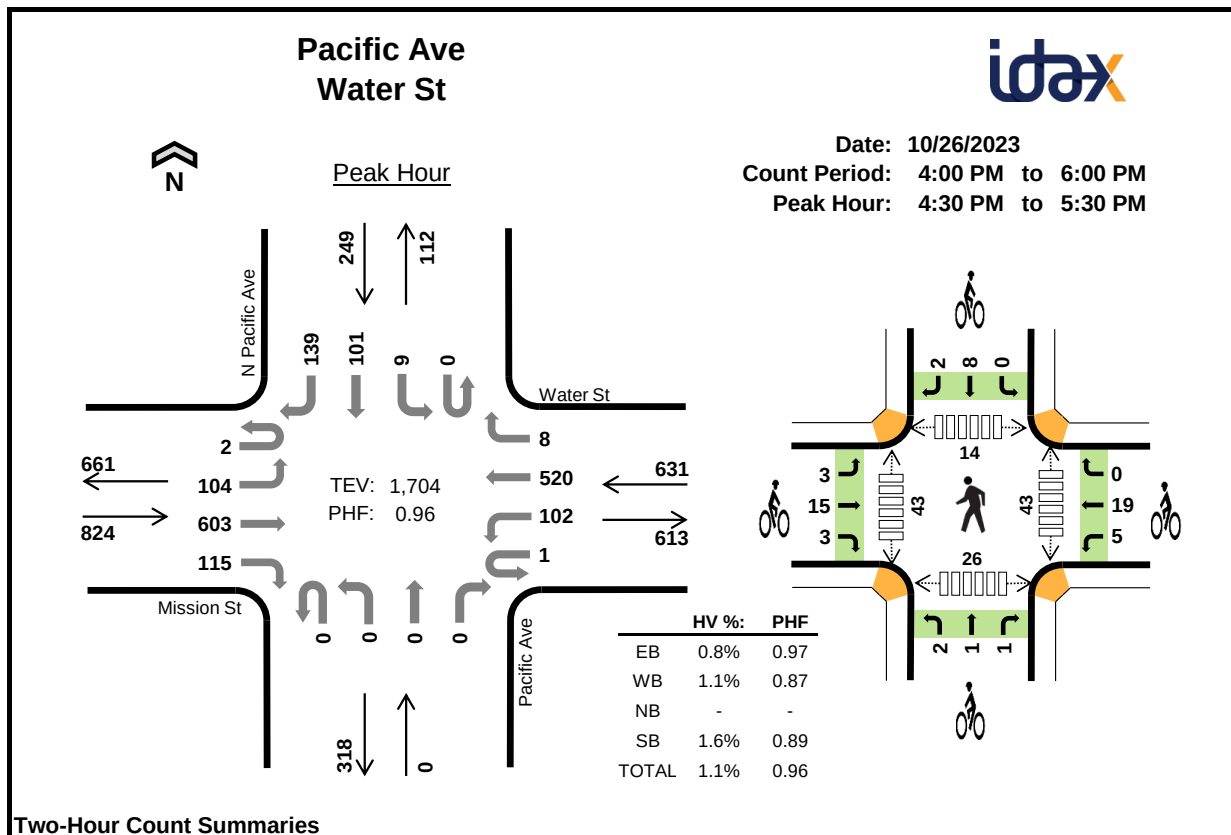
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	0	4	6	1	1	0	0	2	1	3	0	5	9
7:15 AM	1	0	0	6	7	0	1	0	0	1	2	0	1	4	7
7:30 AM	2	1	0	0	3	1	10	0	1	12	5	2	3	0	10
7:45 AM	2	2	0	4	8	5	6	0	1	12	6	5	1	1	13
8:00 AM	1	4	0	5	10	4	12	0	2	18	3	4	2	4	13
8:15 AM	2	8	0	2	12	1	5	0	2	8	14	6	3	9	32
8:30 AM	7	1	0	2	10	0	6	0	0	6	6	1	2	2	11
8:45 AM	6	4	0	1	11	0	9	0	2	11	10	14	6	4	34
Count Total	22	21	0	24	67	12	50	0	8	70	47	35	18	29	129
Peak Hour	16	17	0	10	43	5	32	0	6	43	33	25	13	19	90

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Mission St				Water St				Pacific Ave				N Pacific Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	4	0	6	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	1	7	0
7:30 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
7:45 AM	0	0	2	0	0	1	1	0	0	0	0	0	0	0	3	1	8	24
8:00 AM	0	0	0	1	0	1	3	0	0	0	0	0	0	0	4	1	10	28
8:15 AM	0	0	2	0	0	4	4	0	0	0	0	0	0	0	1	1	12	33
8:30 AM	0	1	5	1	0	1	0	0	0	0	0	0	0	0	2	0	10	40
8:45 AM	0	1	4	1	0	1	3	0	0	0	0	0	0	0	1	0	11	43
Count Total	0	3	16	3	0	9	12	0	0	0	0	0	0	0	20	4	67	0
Peak Hour	0	2	11	3	0	7	10	0	0	0	0	0	0	0	8	2	43	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Mission St				Water St				Pacific Ave				N Pacific Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
7:00 AM	0	1	0		0	1	0		0	0	0		0	0	0		2	0
7:15 AM	0	0	0		0	1	0		0	0	0		0	0	0		1	0
7:30 AM	0	1	0		2	8	0		0	0	0		0	0	1		12	0
7:45 AM	1	3	1		4	2	0		0	0	0		0	0	1		12	27
8:00 AM	0	4	0		4	8	0		0	0	0		0	1	1		18	43
8:15 AM	0	1	0		1	4	0		0	0	0		0	2	0		8	50
8:30 AM	0	0	0		0	6	0		0	0	0		0	0	0		6	44
8:45 AM	0	0	0		3	6	0		0	0	0		0	0	2		11	43
Count Total	1	10	1		14	36	0		0	0	0		0	3	5		70	0
Peak Hour	0	5	0		8	24	0		0	0	0		0	3	3		43	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Mission St				Water St				Pacific Ave				N Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	4:00 PM	0	27	151	37	1	25	96	1	0	0	0	0	0	2	25	35	400	0
	4:15 PM	0	25	154	36	2	27	99	3	0	0	0	0	0	3	21	41	411	0
	4:30 PM	2	28	143	26	1	28	123	1	0	0	0	0	0	3	22	32	409	0
	4:45 PM	0	19	161	23	0	19	127	3	0	0	0	0	0	3	23	44	422	1,642
	5:00 PM	0	37	139	37	0	27	121	0	0	0	0	0	0	1	31	38	431	1,673
	5:15 PM	0	20	160	29	0	28	149	4	0	0	0	0	0	2	25	25	442	1,704
	5:30 PM	0	32	138	35	2	19	102	0	0	0	0	0	0	3	22	33	386	1,681
	5:45 PM	0	24	159	23	2	19	91	4	0	0	0	0	0	2	26	39	389	1,648
Count Total		2	212	1,205	246	8	192	908	16	0	0	0	0	0	19	195	287	3,290	0
Peak Hour	All	2	104	603	115	1	102	520	8	0	0	0	0	0	9	101	139	1,704	0
	HV	0	1	5	1	0	0	6	1	0	0	0	0	0	0	2	2	18	0
	HV%	0%	1%	1%	1%	0%	0%	1%	13%	-	-	-	-	-	0%	2%	1%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	0	3	4	5	4	1	4	14	9	13	5	7	34
4:15 PM	2	0	0	2	4	5	2	0	2	9	10	6	2	3	21
4:30 PM	0	1	0	2	3	1	10	0	2	13	5	15	4	8	32
4:45 PM	3	2	0	0	5	2	7	4	1	14	13	13	3	9	38
5:00 PM	2	3	0	1	6	7	4	0	4	15	14	7	3	2	26
5:15 PM	2	1	0	1	4	11	3	0	3	17	11	8	4	7	30
5:30 PM	1	1	0	0	2	7	4	4	2	17	24	5	1	4	34
5:45 PM	0	3	0	2	5	9	3	0	0	12	11	8	0	6	25
Count Total	10	12	0	11	33	47	37	9	18	111	97	75	22	46	240
Peak Hour	7	7	0	4	18	21	24	4	10	59	43	43	14	26	126

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Mission St				Water St				Pacific Ave				N Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	4	0
4:15 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	3	0
4:45 PM	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	5	16
5:00 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	1	6	18
5:15 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4	18
5:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	17
5:45 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	1	1	5	17
Count Total	0	3	6	1	0	2	9	1	0	0	0	0	0	0	0	7	4	33	0
Peak Hour	0	1	5	1	0	0	6	1	0	0	0	0	0	0	0	2	2	18	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Mission St			Water St			Pacific Ave			N Pacific Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	4	1	3	1	0	0	0	1	0	3	1	14	0				
4:15 PM	0	3	2	0	2	0	0	0	0	0	1	1	9	0				
4:30 PM	0	1	0	2	8	0	0	0	0	0	1	1	13	0				
4:45 PM	0	2	0	2	5	0	2	1	1	0	1	0	14	50				
5:00 PM	2	4	1	0	4	0	0	0	0	0	4	0	15	51				
5:15 PM	1	8	2	1	2	0	0	0	0	0	2	1	17	59				
5:30 PM	0	6	1	2	2	0	0	2	2	0	2	0	17	63				
5:45 PM	2	4	3	1	2	0	0	0	0	0	0	0	12	61				
Count Total	5	32	10	11	26	0	2	3	4	0	14	4	111	0				
Peak Hour	3	15	3	5	19	0	2	1	1	0	8	2	59	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



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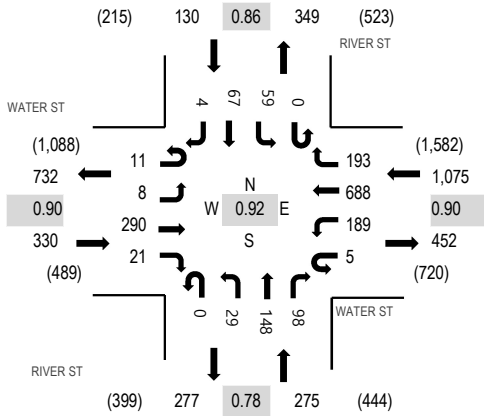
Location: 8 RIVER ST & WATER ST AM

Date: Tuesday, April 25, 2023

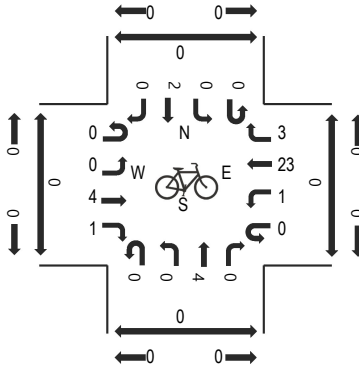
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

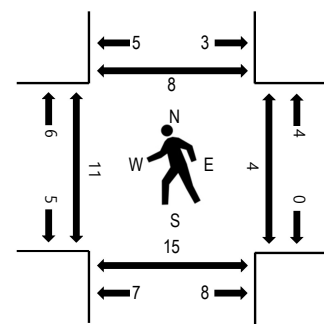
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WATER ST Eastbound				WATER ST Westbound				RIVER ST Northbound				RIVER ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	19	0	0	12	48	13	0	2	16	14	0	9	9	3	145	920	0	3	0	1
7:15 AM	0	1	22	0	2	20	66	25	0	4	16	19	0	7	12	1	195	1,173	1	3	2	2
7:30 AM	0	1	38	2	0	15	96	17	0	4	26	14	0	12	9	1	235	1,469	1	2	4	1
7:45 AM	0	0	73	3	3	31	122	37	0	8	22	24	0	12	9	1	345	1,675	0	1	0	1
8:00 AM	2	1	64	2	1	36	181	40	0	4	20	14	0	16	16	1	398	1,810	2	2	4	4
8:15 AM	1	1	70	6	2	42	193	62	0	11	43	22	0	18	18	2	491		3	1	5	0
8:30 AM	5	3	78	6	0	53	148	44	0	5	32	36	0	12	19	0	441		3	1	3	1
8:45 AM	3	3	78	7	2	58	166	47	0	9	53	26	0	13	14	1	480		3	0	3	3

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	3
Lights	11	8	284	21	5	183	682	191	0	27	139	89	0	54	63	4	1,761
Mediums	0	0	6	0	0	6	6	2	0	2	9	8	0	3	4	0	46
Total	11	8	290	21	5	189	688	193	0	29	148	98	0	59	67	4	1,810



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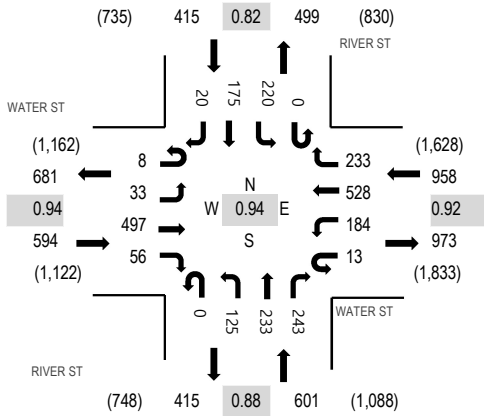
Location: 8 RIVER ST & WATER ST PM

Date: Tuesday, April 25, 2023

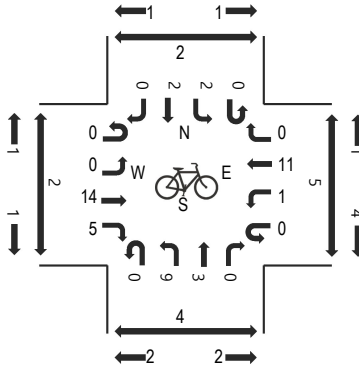
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

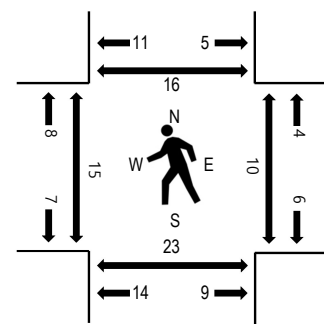
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WATER ST Eastbound				WATER ST Westbound				RIVER ST Northbound				RIVER ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	3	5	129	9	3	41	102	36	0	23	49	55	0	35	44	5	539	2,441	4	3	11	1
4:15 PM	1	4	131	17	2	44	128	72	0	36	61	73	0	59	48	8	684	2,568	5	1	8	2
4:30 PM	2	8	130	8	3	45	117	55	0	33	65	45	0	50	37	3	601	2,422	2	3	6	3
4:45 PM	4	12	104	15	4	53	156	48	0	24	55	58	0	40	39	5	617	2,323	6	1	2	6
5:00 PM	1	9	132	16	4	42	127	58	0	32	52	67	0	71	51	4	666	2,132	2	5	7	5
5:15 PM	1	3	113	10	4	44	112	42	0	9	48	63	0	44	42	3	538		9	1	7	5
5:30 PM	2	7	132	7	4	32	90	29	0	23	45	50	0	42	35	4	502		1	5	6	0
5:45 PM	2	7	93	5	3	28	77	23	0	20	37	65	0	25	36	5	426		5	3	1	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
Lights	8	32	495	55	13	177	527	229	0	123	221	237	0	220	175	20	2,532
Mediums	0	1	2	0	0	7	1	4	0	2	11	6	0	0	0	0	34
Total	8	33	497	56	13	184	528	233	0	125	233	243	0	220	175	20	2,568



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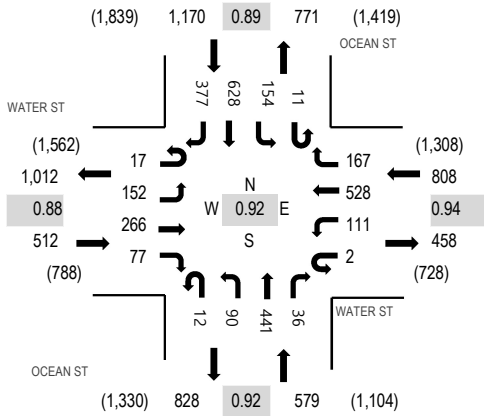
Location: 5 OCEAN ST & WATER ST AM

Date: Tuesday, April 25, 2023

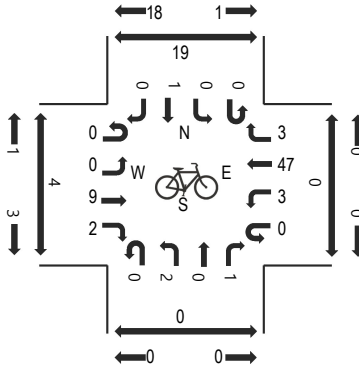
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

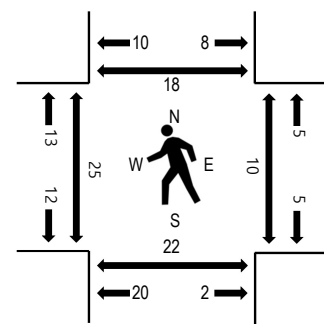
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WATER ST Eastbound				WATER ST Westbound				OCEAN ST Northbound				OCEAN ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	1	19	20	8	1	9	41	35	2	7	101	3	0	18	83	29	377	1,970	4	3	5	2
7:15 AM	1	21	30	6	0	20	59	22	1	11	98	1	6	19	81	34	410	2,330	4	4	1	5
7:30 AM	3	25	30	11	0	14	88	32	3	19	111	8	2	31	96	40	513	2,754	4	2	2	3
7:45 AM	6	20	57	18	0	20	128	31	3	21	123	13	2	39	127	62	670	2,999	5	3	5	4
8:00 AM	2	31	47	21	0	33	137	34	1	16	102	12	3	44	171	83	737	3,069	9	4	10	5
8:15 AM	4	34	87	17	0	28	149	36	4	27	112	7	3	39	158	129	834		5	2	6	2
8:30 AM	6	40	81	18	1	22	141	51	5	23	110	9	2	38	140	71	758		3	3	2	8
8:45 AM	5	47	51	21	1	28	101	46	2	24	117	8	3	33	159	94	740		8	1	4	3

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
Lights	17	144	261	77	2	111	522	161	12	88	434	35	11	149	614	370	3,008
Mediums	0	8	5	0	0	0	6	6	0	2	7	1	0	4	12	7	58
Total	17	152	266	77	2	111	528	167	12	90	441	36	11	154	628	377	3,069



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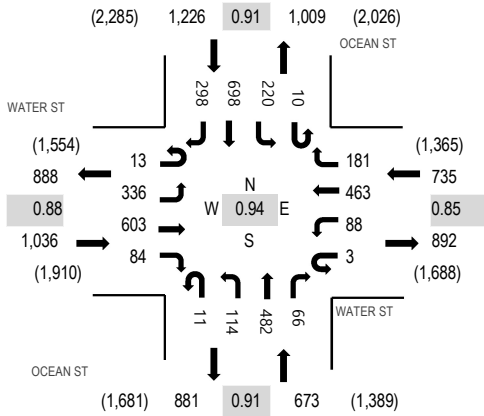
Location: 5 OCEAN ST & WATER ST PM

Date: Tuesday, April 25, 2023

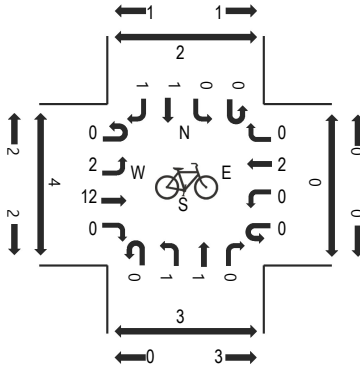
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

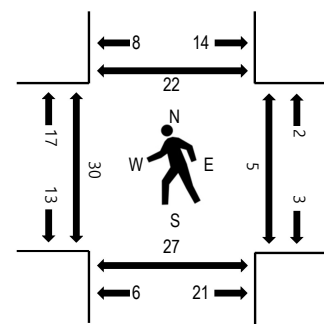
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WATER ST Eastbound				WATER ST Westbound				OCEAN ST Northbound				OCEAN ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	7	71	155	20	2	15	121	55	1	20	137	20	6	58	142	46	876	3,626	6	5	8	11
4:15 PM	3	75	174	16	1	21	107	47	3	33	137	20	2	55	184	95	973	3,670	4	1	8	5
4:30 PM	5	87	159	17	2	16	102	44	5	29	121	19	2	67	183	48	906	3,532	8	1	6	6
4:45 PM	3	60	117	24	0	29	144	49	0	24	116	14	2	41	161	87	871	3,471	12	1	9	1
5:00 PM	2	114	153	27	0	22	110	41	3	28	108	13	4	57	170	68	920	3,323	6	2	4	10
5:15 PM	1	60	121	25	0	12	91	50	2	20	111	7	11	60	198	66	835		5	3	5	6
5:30 PM	2	62	146	24	2	14	90	39	2	26	177	28	4	43	145	41	845		2	4	9	1
5:45 PM	1	68	91	20	0	16	76	47	5	18	116	26	3	37	159	40	723		6	4	5	6

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Lights	13	332	600	84	3	88	458	180	11	112	481	66	10	217	687	293	3,635
Mediums	0	4	3	0	0	0	5	1	0	1	1	0	0	3	11	5	34
Total	13	336	603	84	3	88	463	181	11	114	482	66	10	220	698	298	3,670



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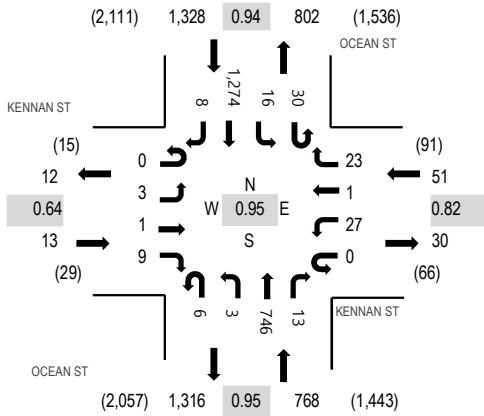
Location: 2 OCEAN ST & KENNAN ST AM

Date: Tuesday, April 25, 2023

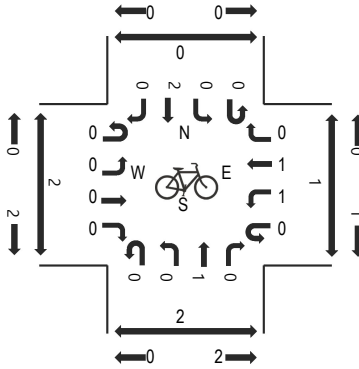
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

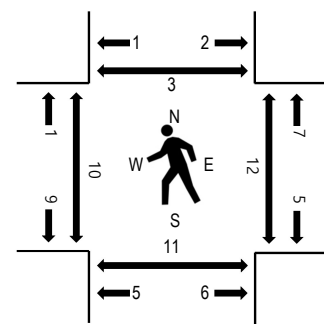
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	KENNAN ST Eastbound				KENNAN ST Westbound				OCEAN ST Northbound				OCEAN ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	0	0	0	3	0	4	1	0	152	1	6	7	133	0	308	1,514	2	0	0	0
7:15 AM	0	4	0	3	0	2	0	9	1	1	151	2	7	2	154	1	337	1,736	0	1	4	0
7:30 AM	0	3	1	0	0	2	0	7	0	0	179	0	8	7	183	0	390	1,922	3	5	0	0
7:45 AM	0	3	0	1	0	7	0	6	0	0	180	7	14	9	251	1	479	2,073	10	6	13	0
8:00 AM	0	2	0	1	0	9	0	5	3	0	173	3	9	3	321	1	530	2,160	3	0	1	0
8:15 AM	0	1	1	4	0	7	0	5	1	1	180	3	8	3	308	1	523		2	2	2	0
8:30 AM	0	0	0	1	0	9	1	7	2	2	197	2	4	4	307	5	541		3	6	6	3
8:45 AM	0	0	0	3	0	2	0	6	0	0	196	5	9	6	338	1	566		2	4	2	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Lights	0	3	1	9	0	27	1	23	6	3	733	12	30	16	1,247	6	2,117
Mediums	0	0	0	0	0	0	0	0	0	0	13	1	0	0	27	1	42
Total	0	3	1	9	0	27	1	23	6	3	746	13	30	16	1,274	8	2,160

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	14	1	9	0	16	1	22	19	9	965	13	44	9	1,198	7	2,327
Mediums	0	0	0	0	0	0	0	0	0	0	7	0	1	0	14	0	22
Total	0	14	1	9	0	16	1	22	19	9	972	13	45	9	1,212	7	2,349



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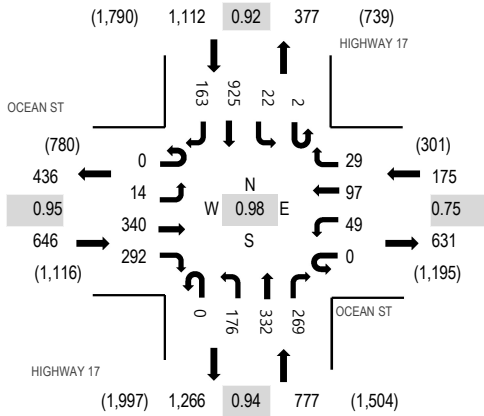
Location: 1 HIGHWAY 17 & OCEAN ST AM

Date: Tuesday, April 25, 2023

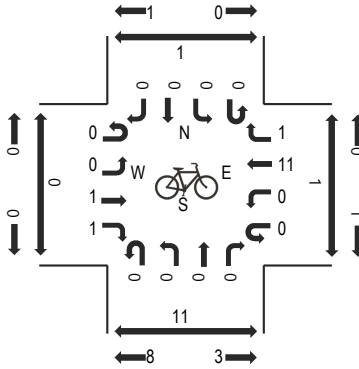
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

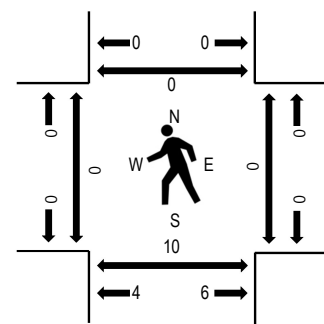
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	OCEAN ST Eastbound				OCEAN ST Westbound				HIGHWAY 17 Northbound				HIGHWAY 17 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	4	52	35	0	2	16	8	0	33	67	58	0	3	108	28	414	2,001	0	0	2	0
7:15 AM	0	3	60	43	0	2	16	6	0	46	83	62	1	3	113	28	466	2,251	0	0	0	0
7:30 AM	0	1	73	46	0	10	19	8	0	32	82	74	0	7	123	34	509	2,473	0	0	0	0
7:45 AM	0	7	93	53	0	6	22	11	0	35	81	74	0	5	190	35	612	2,632	0	0	3	0
8:00 AM	0	6	102	64	0	13	20	9	0	34	74	65	0	8	238	31	664	2,710	0	0	0	0
8:15 AM	0	4	84	68	0	11	21	6	0	42	83	67	1	5	245	51	688		0	0	4	0
8:30 AM	0	3	79	88	0	6	24	7	0	57	88	62	1	4	215	34	668		0	0	3	0
8:45 AM	0	1	75	72	0	19	32	7	0	43	87	75	0	5	227	47	690		0	0	3	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4
Lights	0	12	335	290	0	48	95	29	0	174	327	264	2	21	900	158	2,655
Mediums	0	1	5	2	0	1	2	0	0	2	5	5	0	1	22	5	51
Total	0	14	340	292	0	49	97	29	0	176	332	269	2	22	925	163	2,710



ALL TRAFFIC DATA SERVICES

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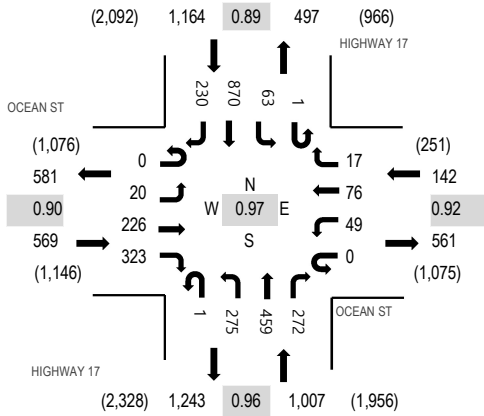
Location: 1 HIGHWAY 17 & OCEAN ST PM

Date: Tuesday, April 25, 2023

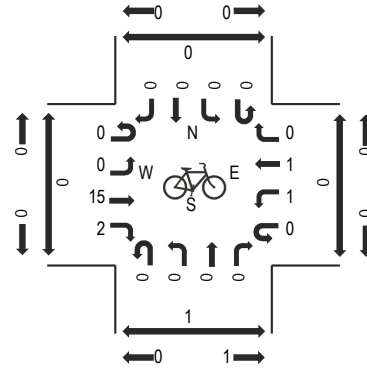
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

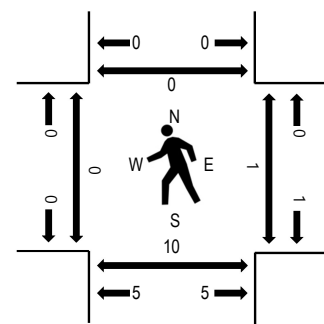
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	OCEAN ST Eastbound				OCEAN ST Westbound				HIGHWAY 17 Northbound				HIGHWAY 17 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	12	55	88	0	9	7	4	0	82	107	74	1	12	190	43	684	2,843	1	0	3	0
4:15 PM	0	6	57	80	0	11	14	2	0	69	110	63	0	17	245	66	740	2,882	0	0	5	0
4:30 PM	0	7	57	82	0	10	24	3	0	73	117	70	0	12	182	49	686	2,841	0	1	2	0
4:45 PM	0	1	53	77	0	11	22	8	0	68	110	64	0	18	231	70	733	2,739	0	0	1	0
5:00 PM	0	6	59	84	0	17	16	4	1	65	122	75	1	16	212	45	723	2,602	0	0	2	0
5:15 PM	0	8	67	90	0	16	18	2	0	64	110	51	2	10	210	51	699		0	0	3	0
5:30 PM	0	1	51	81	0	3	19	3	1	64	109	54	0	8	151	39	584		0	0	4	0
5:45 PM	0	2	53	69	0	10	11	7	0	61	101	71	0	8	167	36	596		0	0	1	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	19	223	319	0	48	75	17	1	272	451	269	1	63	858	228	2,844
Mediums	0	1	3	4	0	1	1	0	0	3	8	3	0	0	12	2	38
Total	0	20	226	323	0	49	76	17	1	275	459	272	1	63	870	230	2,882

SR 1\Mission St Laurel St

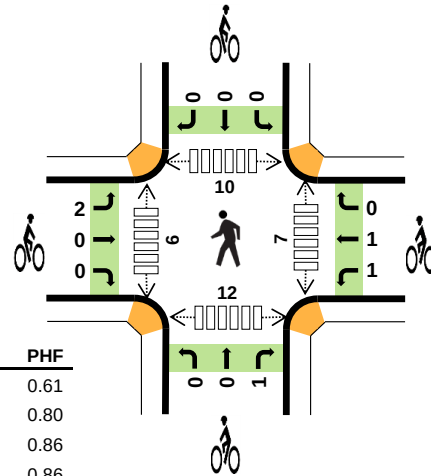
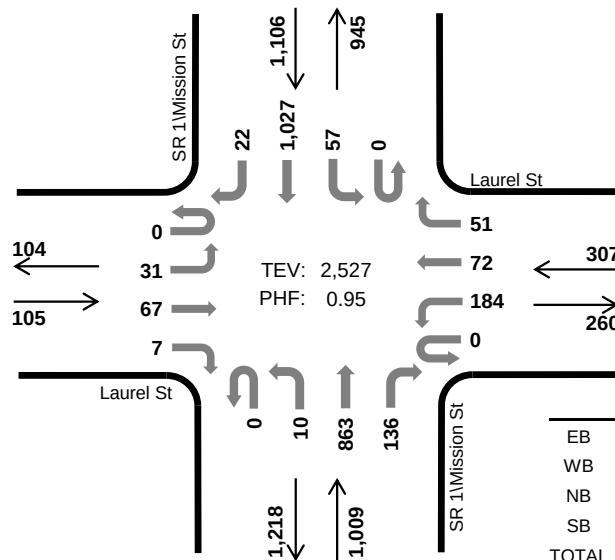


Peak Hour

Date: 10/26/2023

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	1.9%	0.61
WB	3.6%	0.80
NB	6.3%	0.86
SB	5.8%	0.86
TOTAL	5.6%	0.95

Two-Hour Count Summaries

Interval Start		Laurel St				Laurel St				SR 1Mission St				SR 1Mission St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	3	0	0	29	3	4	0	1	151	20	0	7	134	0	353	0
7:15 AM		0	2	3	0	0	34	4	2	0	0	152	21	0	3	201	1	423	0
7:30 AM		0	4	1	2	0	48	14	5	0	1	190	14	0	5	191	2	477	0
7:45 AM		0	4	18	1	0	55	21	8	0	1	195	30	0	6	217	1	557	1,810
8:00 AM		0	6	14	3	0	36	17	11	0	1	209	31	0	8	310	2	648	2,105
8:15 AM		0	14	27	2	0	51	30	15	0	6	225	25	0	15	215	11	636	2,318
8:30 AM		0	7	9	0	0	43	17	14	0	3	243	47	0	20	258	6	667	2,508
8:45 AM		0	4	17	2	0	54	8	11	0	0	186	33	0	14	244	3	576	2,527
Count Total		0	42	92	10	0	350	114	70	0	13	1,551	221	0	78	1,770	26	4,337	0
Peak Hour	All	0	31	67	7	0	184	72	51	0	10	863	136	0	57	1,027	22	2,527	0
	HV	0	2	0	0	0	8	1	2	0	0	53	11	0	2	62	0	141	0
	HV%	-	6%	0%	0%	-	4%	1%	4%	-	0%	6%	8%	-	4%	6%	0%	6%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	8	7	16	0	0	0	0	0	1	0	3	1	5
7:15 AM	0	2	12	9	23	0	0	0	0	0	1	2	0	1	4
7:30 AM	1	4	14	20	39	1	2	0	0	3	0	3	2	1	6
7:45 AM	0	7	12	16	35	1	2	0	0	3	2	4	2	2	10
8:00 AM	0	0	11	11	22	0	1	0	0	1	3	0	4	1	8
8:15 AM	1	4	15	17	37	2	0	0	0	2	2	3	3	3	11
8:30 AM	1	2	24	20	47	0	0	0	0	0	0	0	2	2	4
8:45 AM	0	5	14	16	35	0	1	1	0	2	2	3	1	6	12
Count Total	3	25	110	116	254	4	6	1	0	11	11	15	17	17	60
Peak Hour	2	11	64	64	141	2	2	1	0	5	7	6	10	12	35

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				SR 1Mission St				SR 1Mission St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	1	0	0	6	2	0	0	7	0	16	0
7:15 AM	0	0	0	0	0	2	0	0	0	0	9	3	0	0	9	0	23	0
7:30 AM	0	0	0	1	0	3	1	0	0	1	11	2	0	0	19	1	39	0
7:45 AM	0	0	0	0	0	5	1	1	0	0	8	4	0	0	16	0	35	113
8:00 AM	0	0	0	0	0	0	0	0	0	0	8	3	0	0	11	0	22	119
8:15 AM	0	1	0	0	0	2	0	2	0	0	13	2	0	0	17	0	37	133
8:30 AM	0	1	0	0	0	1	1	0	0	0	19	5	0	1	19	0	47	141
8:45 AM	0	0	0	0	0	5	0	0	0	0	13	1	0	1	15	0	35	141
Count Total	0	2	0	1	0	18	3	4	0	1	87	22	0	2	113	1	254	0
Peak Hour	0	2	0	0	0	8	1	2	0	0	53	11	0	2	62	0	141	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			SR 1Mission St			SR 1Mission St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:30 AM	0	1	0	0	2	0	0	0	0	0	0	0	3	0				
7:45 AM	1	0	0	0	2	0	0	0	0	0	0	0	3	6				
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	7				
8:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	2	9				
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6				
8:45 AM	0	0	0	1	0	0	0	0	1	0	0	0	2	5				
Count Total	3	1	0	1	5	0	0	0	1	0	0	0	11	0				
Peak Hour	2	0	0	1	1	0	0	0	1	0	0	0	5	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SR 1\Mission St Laurel St

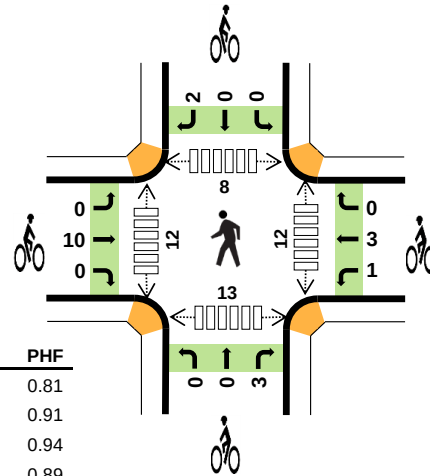
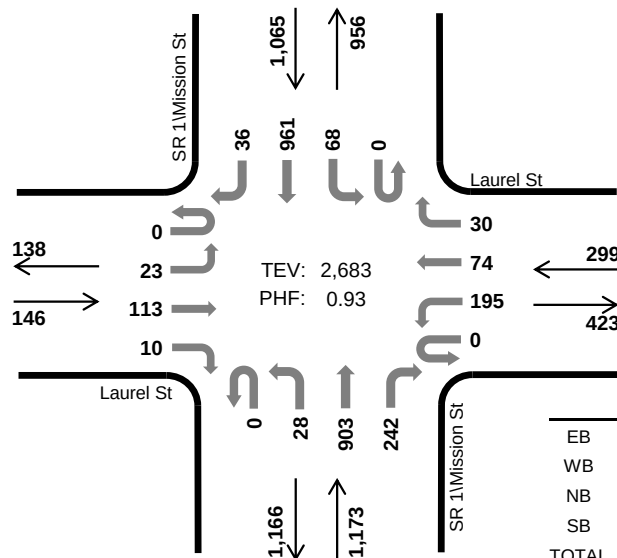


Peak Hour

Date: 10/26/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.0%	0.81
WB	2.7%	0.91
NB	3.0%	0.94
SB	1.5%	0.89
TOTAL	2.2%	0.93

Two-Hour Count Summaries

Interval Start		Laurel St				Laurel St				SR 1Mission St				SR 1Mission St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	7	19	3	0	47	17	5	0	3	244	56	0	19	264	7	691	0
4:15 PM		0	4	15	2	0	42	23	6	0	3	233	59	0	16	245	2	650	0
4:30 PM		0	4	14	1	0	32	18	4	0	1	229	48	0	16	268	9	644	0
4:45 PM		0	5	33	4	0	65	26	9	0	7	209	54	0	8	211	11	642	2,627
5:00 PM		0	4	21	2	0	52	21	9	0	6	250	56	0	19	274	6	720	2,656
5:15 PM		0	5	39	1	0	55	21	5	0	5	223	50	0	15	222	12	653	2,659
5:30 PM		0	7	32	4	0	40	18	5	0	7	217	72	0	16	223	12	653	2,668
5:45 PM		0	7	21	3	0	48	14	11	0	10	213	64	0	18	242	6	657	2,683
Count Total		0	43	194	20	0	381	158	54	0	42	1,818	459	0	127	1,949	65	5,310	0
Peak Hour	All	0	23	113	10	0	195	74	30	0	28	903	242	0	68	961	36	2,683	0
	HV	0	0	0	0	0	7	1	0	0	0	28	7	0	1	15	0	59	0
	HV%	-	0%	0%	0%	-	4%	1%	0%	-	0%	3%	3%	-	1%	2%	0%	2%	0

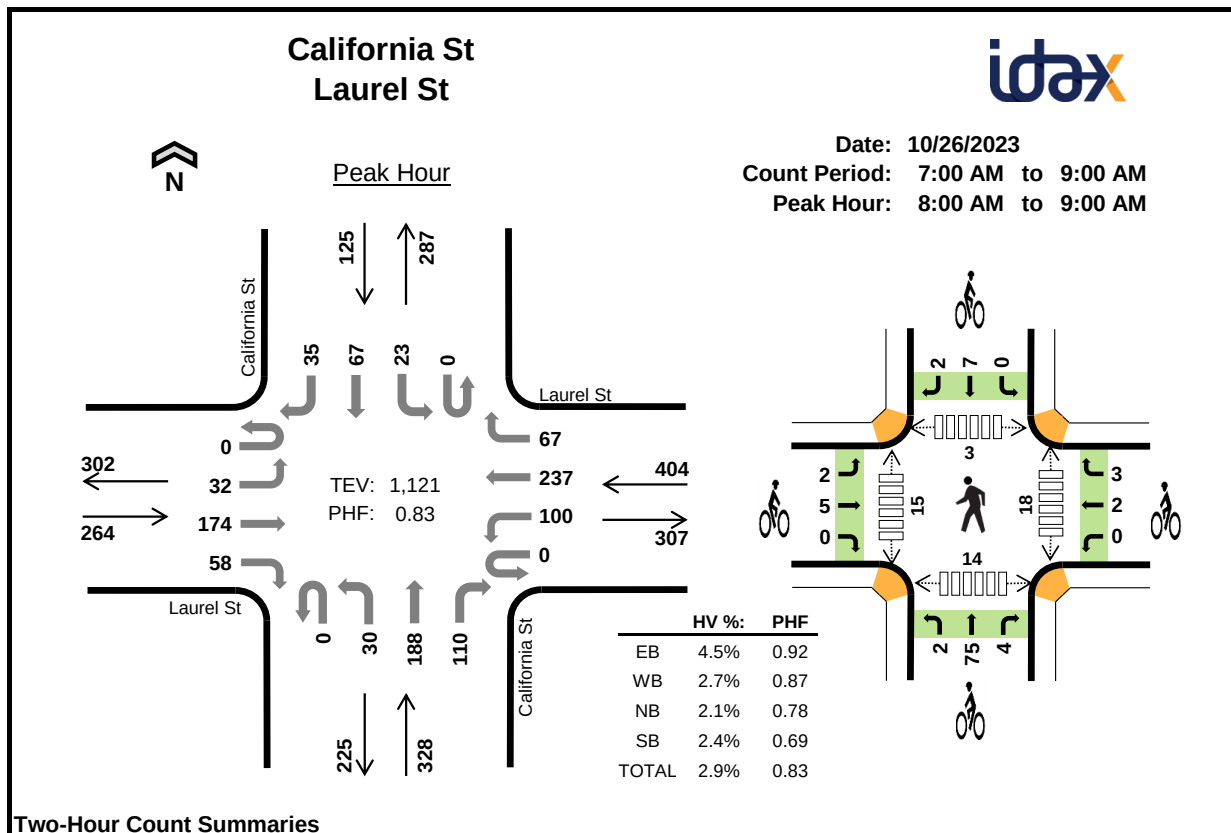
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	3	8	1	12	1	0	5	0	6	1	1	0	4	6
4:15 PM	1	1	14	5	21	1	0	0	0	1	5	4	1	5	15
4:30 PM	0	3	9	3	15	1	1	1	0	3	2	1	0	2	5
4:45 PM	1	3	16	7	27	2	0	0	0	2	4	5	4	5	18
5:00 PM	0	1	7	4	12	1	2	1	0	4	2	2	2	3	9
5:15 PM	0	3	9	3	15	4	0	2	1	7	3	3	3	5	14
5:30 PM	0	2	8	7	17	3	1	0	1	5	3	6	2	4	15
5:45 PM	0	2	11	2	15	2	1	0	0	3	4	1	1	1	7
Count Total	2	18	82	32	134	15	5	9	2	31	24	23	13	29	89
Peak Hour	0	8	35	16	59	10	4	3	2	19	12	12	8	13	45

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				SR 1Mission St				SR 1Mission St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	2	0	1	0	0	6	2	0	0	1	0	12	0
4:15 PM	0	0	1	0	0	1	0	0	0	0	10	4	0	1	4	0	21	0
4:30 PM	0	0	0	0	0	3	0	0	0	0	8	1	0	1	2	0	15	0
4:45 PM	0	0	1	0	0	3	0	0	0	0	11	5	0	1	6	0	27	75
5:00 PM	0	0	0	0	0	1	0	0	0	0	7	0	0	0	4	0	12	75
5:15 PM	0	0	0	0	0	3	0	0	0	0	8	1	0	0	3	0	15	69
5:30 PM	0	0	0	0	0	1	1	0	0	0	5	3	0	0	7	0	17	71
5:45 PM	0	0	0	0	0	2	0	0	0	0	8	3	0	1	1	0	15	59
Count Total	0	0	2	0	0	16	1	1	0	0	63	19	0	4	28	0	134	0
Peak Hour	0	0	0	0	0	7	1	0	0	0	28	7	0	1	15	0	59	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Laurel St			Laurel St			SR 1Mission St			SR 1Mission St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	1	0	0	0	0	0	0	5	0	0	0	6	0			
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0			
4:30 PM	0	1	0	0	1	0	0	0	1	0	0	0	3	0			
4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	12			
5:00 PM	0	1	0	1	1	0	0	0	1	0	0	0	4	10			
5:15 PM	0	4	0	0	0	0	0	0	2	0	0	1	7	16			
5:30 PM	0	3	0	0	1	0	0	0	0	0	0	1	5	18			
5:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	19			
Count Total	0	15	0	1	4	0	0	0	9	0	0	2	31	0			
Peak Hour	0	10	0	1	3	0	0	0	3	0	0	2	19	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				California St				California St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	25	2	0	7	35	3	1	0	17	3	0	2	2	0	97	0
7:15 AM		0	2	23	6	0	5	34	1	0	2	23	6	0	0	4	2	108	0
7:30 AM		0	2	13	5	0	9	54	6	0	4	21	7	0	1	8	4	134	0
7:45 AM		0	4	42	5	0	15	79	8	0	5	39	10	0	1	8	3	219	558
8:00 AM		0	11	34	8	0	23	61	14	0	7	38	20	0	4	12	3	235	696
8:15 AM		0	15	34	21	0	36	56	24	0	12	60	33	0	7	19	19	336	924
8:30 AM		0	3	51	18	0	20	50	25	0	8	47	28	0	10	25	8	293	1,083
8:45 AM		0	3	55	11	0	21	70	4	0	3	43	29	0	2	11	5	257	1,121
Count Total		0	40	277	76	0	136	439	85	1	41	288	136	0	27	89	44	1,679	0
Peak Hour	All	0	32	174	58	0	100	237	67	0	30	188	110	0	23	67	35	1,121	0
	HV	0	1	10	1	0	2	9	0	0	1	1	5	0	0	2	1	33	0
	HV%	-	3%	6%	2%	-	2%	4%	0%	-	3%	1%	5%	-	0%	3%	3%	3%	0

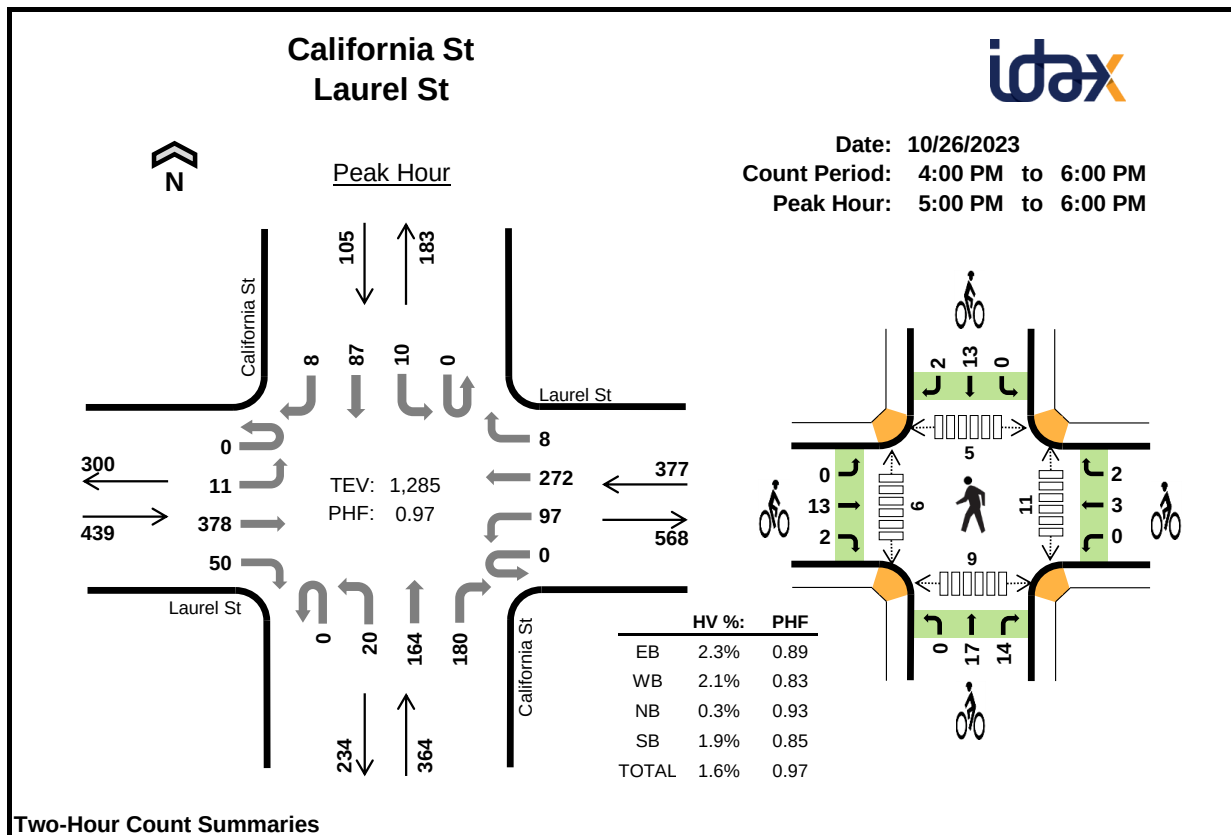
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	0	0	0	2	0	0	0	1	1	1	0	1	0	2
7:15 AM	4	4	1	0	9	0	0	3	1	4	0	4	1	1	6
7:30 AM	2	5	2	0	9	1	2	3	2	8	1	2	2	0	5
7:45 AM	4	5	1	0	10	0	3	3	2	8	2	2	1	1	6
8:00 AM	3	1	1	0	5	1	2	17	4	24	2	4	3	6	15
8:15 AM	2	3	0	1	6	2	1	52	0	55	10	7	0	2	19
8:30 AM	4	2	4	0	10	2	2	9	1	14	5	2	0	2	9
8:45 AM	3	5	2	2	12	2	0	3	4	9	1	2	0	4	7
Count Total	24	25	11	3	63	8	10	90	15	123	22	23	8	16	69
Peak Hour	12	11	7	3	33	7	5	81	9	102	18	15	3	14	50

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				California St				California St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	3	1	0	1	3	0	0	0	0	1	0	0	0	0	9	0
7:30 AM	0	0	2	0	0	0	5	0	0	0	0	2	0	0	0	0	9	0
7:45 AM	0	0	4	0	0	0	5	0	0	1	0	0	0	0	0	0	10	30
8:00 AM	0	0	3	0	0	1	0	0	0	0	0	1	0	0	0	0	5	33
8:15 AM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	1	0	6	30
8:30 AM	0	1	3	0	0	0	2	0	0	0	1	3	0	0	0	0	10	31
8:45 AM	0	0	2	1	0	1	4	0	0	1	0	1	0	0	1	1	12	33
Count Total	0	1	21	2	0	3	22	0	0	2	1	8	0	0	2	1	63	0
Peak Hour	0	1	10	1	0	2	9	0	0	1	1	5	0	0	2	1	33	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			California St			California St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0				
7:15 AM	0	0	0	0	0	0	0	1	2	0	1	0	4	0				
7:30 AM	0	1	0	0	2	0	0	3	0	0	2	0	8	0				
7:45 AM	0	0	0	1	1	1	1	2	0	0	2	0	8	21				
8:00 AM	0	1	0	0	1	1	1	15	1	0	4	0	24	44				
8:15 AM	1	1	0	0	0	1	0	49	3	0	0	0	55	95				
8:30 AM	1	1	0	0	1	1	0	9	0	0	0	1	14	101				
8:45 AM	0	2	0	0	0	0	1	2	0	0	3	1	9	102				
Count Total	2	6	0	1	5	4	3	81	6	0	13	2	123	0				
Peak Hour	2	5	0	0	2	3	2	75	4	0	7	2	102	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

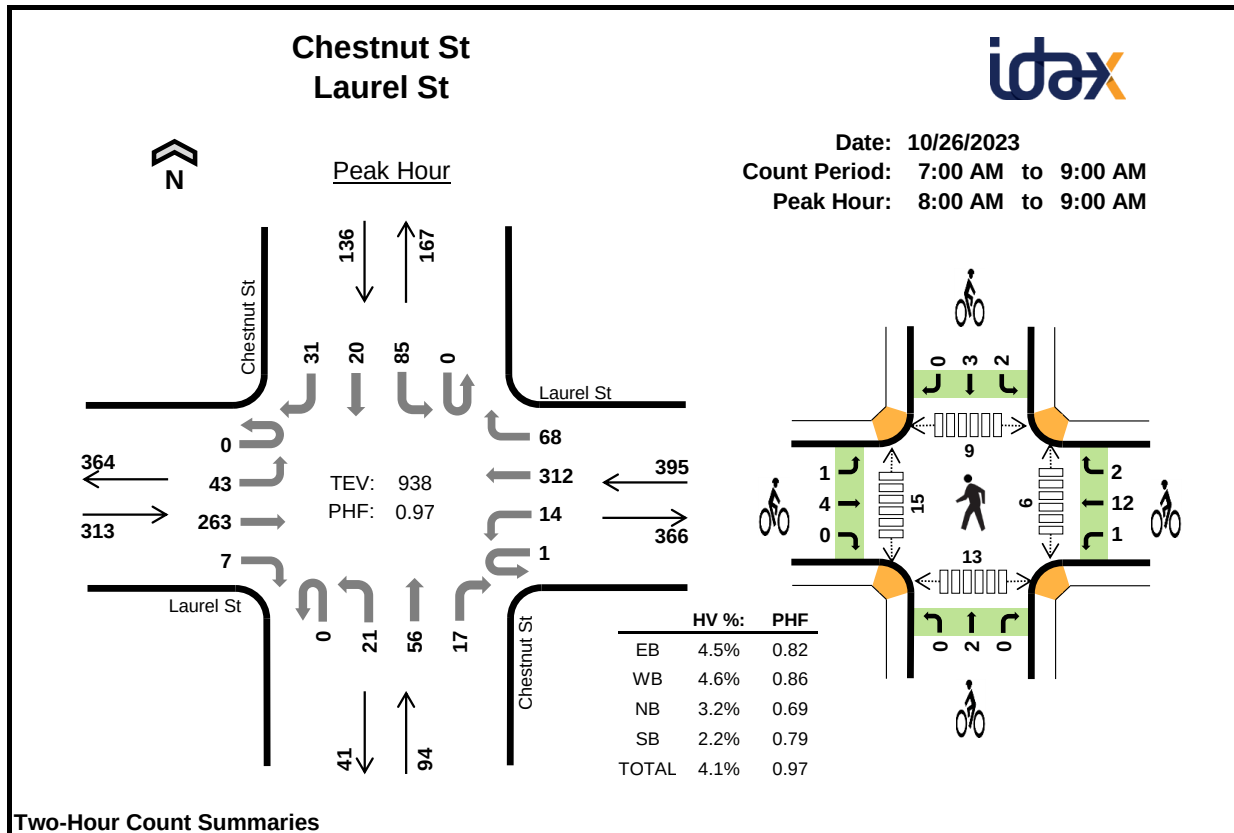
**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				California St				California St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	6	76	13	0	18	60	5	0	3	65	77	0	5	25	4	357	0
4:15 PM		0	4	64	15	0	25	65	2	0	7	57	39	0	1	27	3	309	0
4:30 PM		0	3	63	18	0	18	64	2	0	4	40	33	0	2	25	1	273	0
4:45 PM		0	2	87	11	0	17	82	1	0	7	44	25	0	3	17	2	298	1,237
5:00 PM		0	1	88	11	0	29	80	4	0	7	39	33	0	0	27	0	319	1,199
5:15 PM		0	2	87	15	0	26	67	0	0	3	43	47	0	2	17	3	312	1,202
5:30 PM		0	3	98	11	0	21	71	3	0	4	40	50	0	3	25	3	332	1,261
5:45 PM		0	5	105	13	0	21	54	1	0	6	42	50	0	5	18	2	322	1,285
Count Total		0	26	668	107	0	175	543	18	0	41	370	354	0	21	181	18	2,522	0
Peak Hour	All	0	11	378	50	0	97	272	8	0	20	164	180	0	10	87	8	1,285	0
	HV	0	1	9	0	0	0	8	0	0	0	1	0	0	0	2	0	21	0
	HV%	-	9%	2%	0%	-	0%	3%	0%	-	0%	1%	0%	-	0%	2%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	1	0	4	8	1	8	4	21	4	4	1	3	12
4:15 PM	6	2	1	1	10	2	1	9	0	12	5	4	0	3	12
4:30 PM	2	3	3	0	8	2	3	5	1	11	1	1	0	4	6
4:45 PM	5	3	1	0	9	3	0	6	2	11	1	1	2	5	9
5:00 PM	0	1	0	1	2	2	1	11	5	19	1	1	1	0	3
5:15 PM	1	3	1	1	6	8	2	11	2	23	4	2	3	5	14
5:30 PM	3	2	0	0	5	3	1	4	3	11	5	1	1	0	7
5:45 PM	6	2	0	0	8	2	1	5	5	13	1	2	0	4	7
Count Total	25	17	7	3	52	30	10	59	22	121	22	16	8	24	70
Peak Hour	10	8	1	2	21	15	5	31	15	66	11	6	5	9	31

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Laurel St				Laurel St				California St				California St				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0
4:15 PM	0	0	5	1	0	0	2	0	0	0	0	1	0	0	0	0	1	10	0
4:30 PM	0	0	2	0	0	0	3	0	0	0	2	1	0	0	0	0	0	8	0
4:45 PM	0	0	4	1	0	0	3	0	0	0	1	0	0	0	0	0	0	9	31
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	29
5:15 PM	0	0	1	0	0	0	3	0	0	0	1	0	0	0	0	1	0	6	25
5:30 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	22
5:45 PM	0	1	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8	21
Count Total	0	1	22	2	0	0	17	0	0	1	4	2	0	0	0	2	1	52	0
Peak Hour	0	1	9	0	0	0	8	0	0	0	1	0	0	0	0	2	0	21	0
Two-Hour Count Summaries - Bikes																			
Interval Start	Laurel St			Laurel St			California St			California St			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
4:00 PM	0	8	0	1	0	0	0	5	3	0	4	0	21	0					
4:15 PM	0	2	0	1	0	0	0	5	4	0	0	0	12	0					
4:30 PM	0	2	0	1	2	0	1	0	4	0	1	0	11	0					
4:45 PM	0	3	0	0	0	0	1	3	2	1	1	0	11	55					
5:00 PM	0	2	0	0	1	0	0	9	2	0	3	2	19	53					
5:15 PM	0	6	2	0	1	1	0	4	7	0	2	0	23	64					
5:30 PM	0	3	0	0	0	1	0	1	3	0	3	0	11	64					
5:45 PM	0	2	0	0	1	0	0	3	2	0	5	0	13	66					
Count Total	0	28	2	3	5	2	2	30	27	1	19	2	121	0					
Peak Hour	0	13	2	0	3	2	0	17	14	0	13	2	66	0					
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																			

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Chestnut St				Chestnut St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	25	2	0	0	33	8	0	3	4	4	0	11	2	3	96	0
7:15 AM		0	3	28	1	0	1	42	12	0	4	12	2	0	9	2	1	117	0
7:30 AM		0	8	20	2	0	2	59	8	0	3	6	4	0	19	3	3	137	0
7:45 AM		0	15	47	0	0	5	76	20	0	7	11	7	0	18	3	4	213	563
8:00 AM		0	5	55	1	1	3	79	23	0	10	15	9	0	17	5	3	226	693
8:15 AM		0	11	60	2	0	1	89	25	0	2	14	3	0	25	4	6	242	818
8:30 AM		0	13	68	2	0	5	73	15	0	1	10	2	0	23	10	10	232	913
8:45 AM		0	14	80	2	0	5	71	5	0	8	17	3	0	20	1	12	238	938
Count Total		0	70	383	12	1	22	522	116	0	38	89	34	0	142	30	42	1,501	0
Peak Hour	All	0	43	263	7	1	14	312	68	0	21	56	17	0	85	20	31	938	0
	HV	0	2	12	0	0	2	9	7	0	0	1	2	0	2	1	0	38	0
	HV%	-	5%	5%	0%	0%	14%	3%	10%	-	0%	2%	12%	-	2%	5%	0%	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	0	0	1	0	0	0	0	0	1	1	2	1	5
7:15 AM	4	3	0	0	7	2	0	0	0	2	1	3	0	2	6
7:30 AM	2	4	0	1	7	2	3	0	0	5	3	0	3	3	9
7:45 AM	4	7	1	0	12	0	2	0	0	2	3	1	6	7	17
8:00 AM	3	5	1	2	11	1	3	1	1	6	0	3	2	4	9
8:15 AM	4	6	1	1	12	1	4	0	1	6	1	5	1	1	8
8:30 AM	5	3	0	0	8	2	6	0	0	8	2	4	3	5	14
8:45 AM	2	4	1	0	7	1	2	1	3	7	3	3	3	3	12
Count Total	25	32	4	4	65	9	20	2	5	36	14	20	20	26	80
Peak Hour	14	18	3	3	38	5	15	2	5	27	6	15	9	13	43

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				Chestnut St				Chestnut St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0
7:30 AM	0	0	1	1	0	0	4	0	0	0	0	0	0	1	0	0	7	0
7:45 AM	0	1	3	0	0	2	4	1	0	0	1	0	0	0	0	0	12	27
8:00 AM	0	0	3	0	0	1	1	3	0	0	0	1	0	1	1	0	11	37
8:15 AM	0	1	3	0	0	0	3	3	0	0	1	0	0	1	0	0	12	42
8:30 AM	0	1	4	0	0	1	2	0	0	0	0	0	0	0	0	0	8	43
8:45 AM	0	0	2	0	0	0	3	1	0	0	0	1	0	0	0	0	7	38
Count Total	0	3	21	1	0	4	20	8	0	0	2	2	0	3	1	0	65	0
Peak Hour	0	2	12	0	0	2	9	7	0	0	1	2	0	2	1	0	38	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Chestnut St			Chestnut St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0				
7:30 AM	0	2	0	0	2	1	0	0	0	0	0	0	5	0				
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	9				
8:00 AM	0	1	0	0	3	0	0	1	0	1	0	0	6	15				
8:15 AM	0	1	0	0	3	1	0	0	0	1	0	0	6	19				
8:30 AM	1	1	0	1	4	1	0	0	0	0	0	0	8	22				
8:45 AM	0	1	0	0	2	0	0	1	0	0	3	0	7	27				
Count Total	1	8	0	1	16	3	0	2	0	2	3	0	36	0				
Peak Hour	1	4	0	1	12	2	0	2	0	2	3	0	27	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



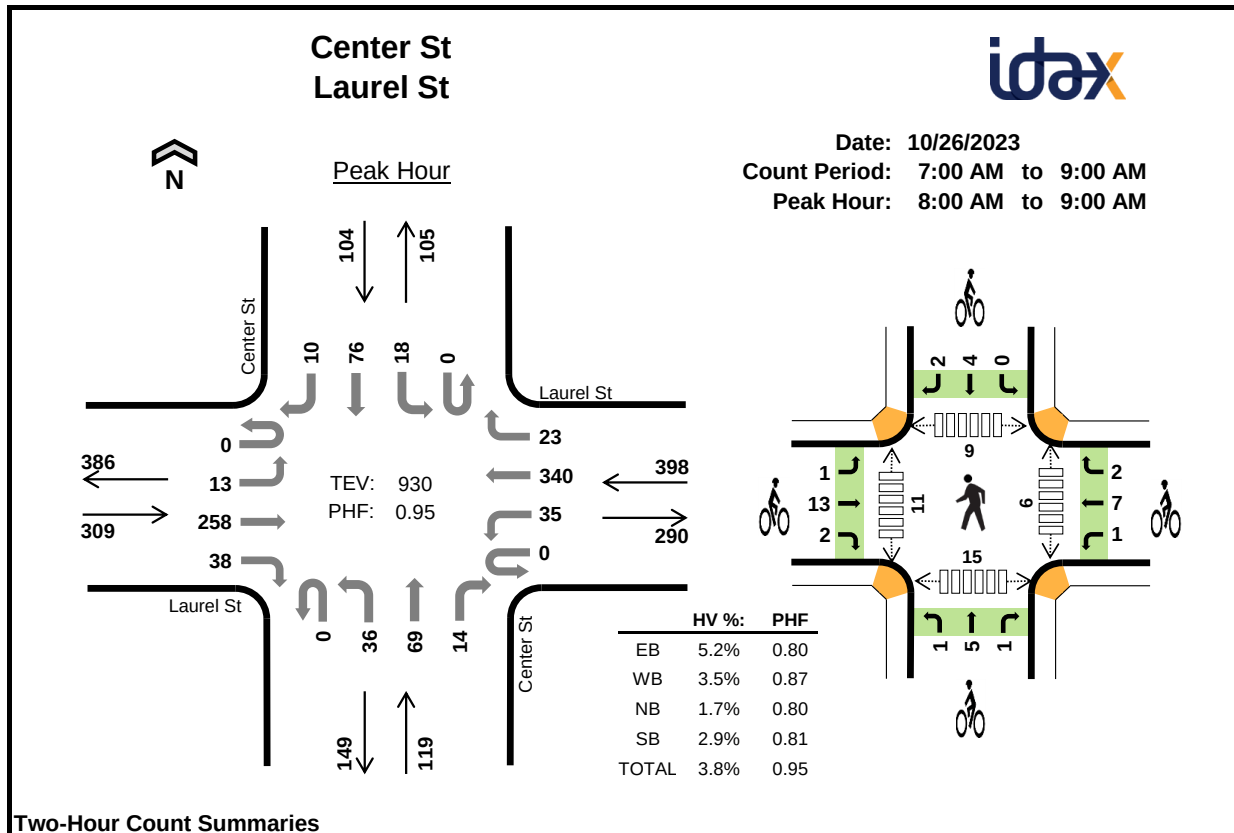
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	0	1	5	10	2	0	2	14	5	8	5	3	21
4:15 PM	6	1	0	0	7	7	4	1	1	13	2	23	1	11	37
4:30 PM	2	3	0	1	6	3	6	1	2	12	6	3	2	4	15
4:45 PM	6	3	1	1	11	5	1	0	2	8	6	2	3	6	17
5:00 PM	0	2	0	0	2	2	3	0	0	5	6	8	7	10	31
5:15 PM	2	3	0	1	6	6	3	2	4	15	2	7	7	17	33
5:30 PM	2	1	0	0	3	7	7	0	2	16	9	3	6	4	22
5:45 PM	3	2	0	0	5	1	2	1	0	4	3	5	3	9	20
Count Total	24	16	1	4	45	41	28	5	13	87	39	59	34	64	196
Peak Hour	7	8	0	1	16	16	15	3	6	40	20	23	23	40	106

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				Chestnut St				Chestnut St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	0	1	0	0	0	0	0	0	1	0	0	5	0
4:15 PM	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	7	0
4:30 PM	0	1	1	0	0	0	3	0	0	0	0	0	0	1	0	0	6	0
4:45 PM	0	0	6	0	0	0	3	0	0	0	1	0	0	0	1	0	11	29
5:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26
5:15 PM	0	1	1	0	0	0	3	0	0	0	0	0	0	0	1	0	6	25
5:30 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	22
5:45 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	16
Count Total	0	3	21	0	0	0	16	0	0	0	1	0	0	2	2	0	45	0
Peak Hour	0	1	6	0	0	0	8	0	0	0	0	0	0	0	1	0	16	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Chestnut St			Chestnut St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	10	0	0	2	0	0	0	0	2	0	0	14	0				
4:15 PM	0	7	0	1	3	0	0	1	0	0	0	1	13	0				
4:30 PM	1	2	0	1	3	2	0	1	0	0	0	2	12	0				
4:45 PM	0	5	0	1	0	0	0	0	0	1	1	0	8	47				
5:00 PM	0	2	0	1	1	1	0	0	0	0	0	0	5	38				
5:15 PM	0	5	1	0	3	0	0	1	1	2	1	1	15	40				
5:30 PM	0	6	1	1	3	3	0	0	0	0	2	0	16	44				
5:45 PM	0	1	0	0	2	0	0	0	1	0	0	0	4	40				
Count Total	1	38	2	5	17	6	0	3	2	5	4	4	87	0				
Peak Hour	0	14	2	2	9	4	0	1	2	2	3	1	40	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Center St				Center St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	27	12	0	4	35	5	0	3	5	0	1	0	7	1	100	0
7:15 AM		0	4	29	4	0	5	47	2	0	7	10	2	0	0	5	0	115	0
7:30 AM		0	2	33	9	0	4	64	7	0	10	5	1	0	1	4	3	143	0
7:45 AM		0	1	61	11	0	5	82	5	0	9	7	3	0	2	12	3	201	559
8:00 AM		0	2	57	9	0	7	98	5	0	14	17	6	0	2	18	1	236	695
8:15 AM		0	4	60	9	0	10	100	5	0	5	22	2	0	4	21	3	245	825
8:30 AM		0	4	85	7	0	10	72	5	0	13	14	3	0	7	24	1	245	927
8:45 AM		0	3	56	13	0	8	70	8	0	4	16	3	0	5	13	5	204	930
Count Total		0	20	408	74	0	53	568	42	0	65	96	20	1	21	104	17	1,489	0
Peak Hour	All	0	13	258	38	0	35	340	23	0	36	69	14	0	18	76	10	930	0
	HV	0	1	13	2	0	1	13	0	0	0	1	1	0	2	1	0	35	0
	HV%	-	8%	5%	5%	-	3%	4%	0%	-	0%	1%	7%	-	11%	1%	0%	4%	0

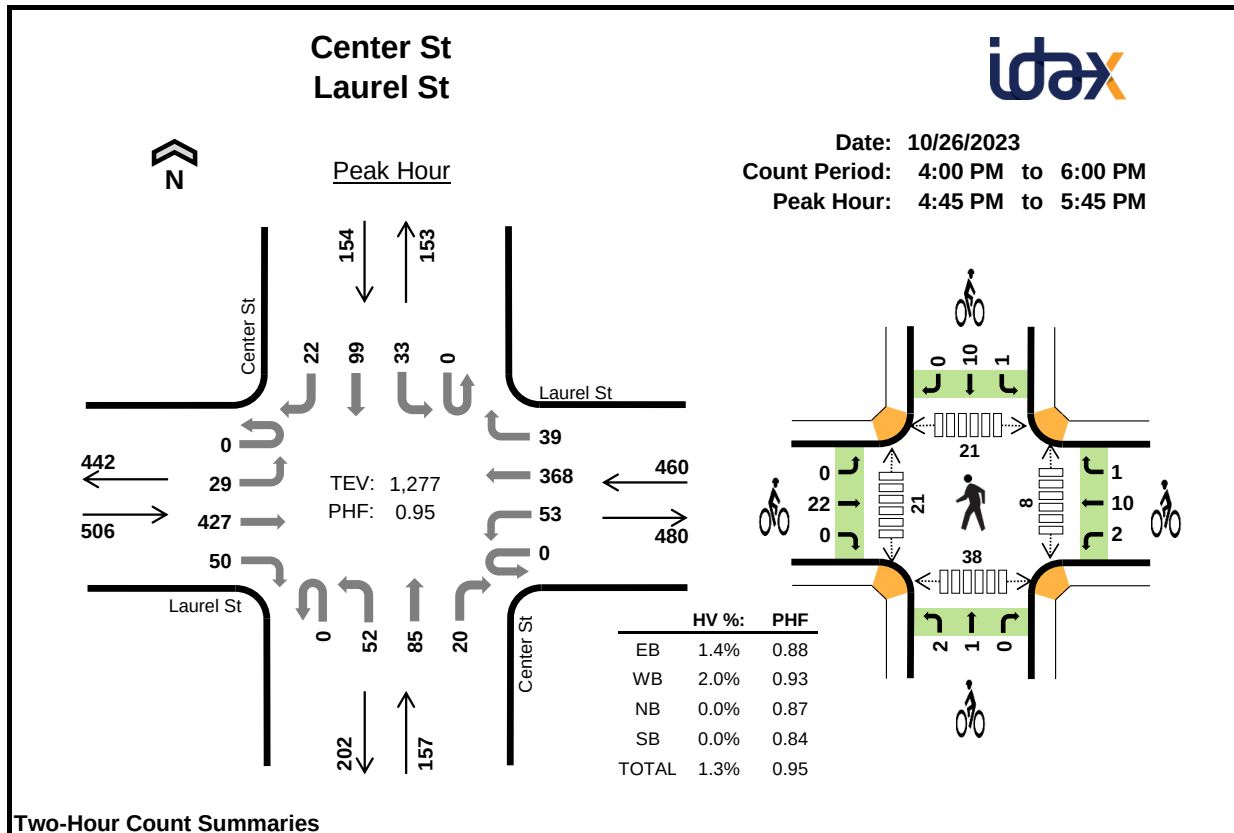
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	0	1	2	0	0	1	0	1	0	0	1	1	2
7:15 AM	4	2	0	1	7	4	1	0	1	6	2	0	9	3	14
7:30 AM	2	3	1	0	6	2	2	2	0	6	1	1	5	4	11
7:45 AM	3	4	2	0	9	0	3	0	1	4	2	5	6	8	21
8:00 AM	5	4	0	0	9	3	4	2	1	10	0	3	3	7	13
8:15 AM	3	4	0	1	8	4	1	1	0	6	3	1	1	0	5
8:30 AM	4	3	0	2	9	5	5	1	1	12	1	2	3	6	12
8:45 AM	4	3	2	0	9	4	0	3	4	11	2	5	2	2	11
Count Total	26	23	5	5	59	22	16	10	8	56	11	17	30	31	89
Peak Hour	16	14	2	3	35	16	10	7	6	39	6	11	9	15	41

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Laurel St				Laurel St				Center St				Center St				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0
7:15 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	1	0	7	0
7:30 AM	0	0	1	1	0	1	2	0	0	1	0	0	0	0	0	0	0	6	0
7:45 AM	0	0	3	0	0	0	4	0	0	2	0	0	0	0	0	0	0	9	24
8:00 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	31
8:15 AM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	1	0	0	8	32
8:30 AM	0	1	3	0	0	1	2	0	0	0	0	0	0	0	1	1	0	9	35
8:45 AM	0	0	2	2	0	0	3	0	0	0	1	1	0	0	0	0	0	9	35
Count Total	0	1	21	4	0	2	21	0	0	3	1	1	0	2	3	0	0	59	0
Peak Hour	0	1	13	2	0	1	13	0	0	0	1	1	0	2	1	0	0	35	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Center St			Center St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	6	0
7:15 AM	0	4	0	0	1	0	0	0	0	0	1	0	6	0	0	0	6	0
7:30 AM	0	2	0	0	2	0	0	2	0	0	0	0	6	0	0	0	6	0
7:45 AM	0	0	0	0	2	1	0	0	0	0	1	0	4	17	0	0	4	17
8:00 AM	0	3	0	0	3	1	0	2	0	0	1	0	10	26	0	0	10	26
8:15 AM	0	4	0	0	0	1	1	0	0	0	0	0	6	26	0	0	6	26
8:30 AM	1	3	1	1	4	0	0	0	1	0	0	1	12	32	0	0	12	32
8:45 AM	0	3	1	0	0	0	0	3	0	0	3	1	11	39	0	0	11	39
Count Total	1	19	2	1	12	3	1	8	1	0	6	2	56	0	0	0	56	0
Peak Hour	1	13	2	1	7	2	1	5	1	0	4	2	39	0	0	0	39	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Laurel St				Laurel St				Center St				Center St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	14	88	6	0	8	78	9	0	18	19	4	0	8	25	9	286	0
4:15 PM		0	6	101	5	0	11	84	11	0	9	20	6	0	9	37	4	303	0
4:30 PM		0	7	102	10	0	10	90	4	0	9	21	7	0	13	29	7	309	0
4:45 PM		0	8	98	11	0	11	97	11	0	9	20	5	0	7	24	2	303	1,201
5:00 PM		0	4	100	15	0	14	87	6	0	17	19	5	0	6	29	11	313	1,228
5:15 PM		0	5	111	10	0	18	95	11	0	14	18	5	0	13	19	6	325	1,250
5:30 PM		0	12	118	14	0	10	89	11	0	12	28	5	0	7	27	3	336	1,277
5:45 PM		0	9	117	11	0	8	63	6	0	9	14	5	0	6	28	9	285	1,259
Count Total		0	65	835	82	0	90	683	69	0	97	159	42	0	69	218	51	2,460	0
Peak Hour	All	0	29	427	50	0	53	368	39	0	52	85	20	0	33	99	22	1,277	0
	HV	0	0	6	1	0	0	9	0	0	0	0	0	0	0	0	0	16	0
	HV%	-	0%	1%	2%	-	0%	2%	0%	-	0%	0%	0%	-	0%	0%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	0	0	3	8	3	0	2	13	2	11	6	9	28
4:15 PM	4	1	0	0	5	4	2	1	2	9	0	2	2	7	11
4:30 PM	3	3	0	0	6	6	3	3	4	16	3	2	1	7	13
4:45 PM	5	3	0	0	8	6	1	0	4	11	3	2	4	6	15
5:00 PM	0	2	0	0	2	5	5	0	1	11	4	5	7	15	31
5:15 PM	1	3	0	0	4	8	3	0	3	14	1	7	7	9	24
5:30 PM	1	1	0	0	2	3	4	3	3	13	0	7	3	8	18
5:45 PM	4	2	0	0	6	1	1	1	2	5	0	5	9	10	24
Count Total	20	16	0	0	36	41	22	8	21	92	13	41	39	71	164
Peak Hour	7	9	0	0	16	22	13	3	11	49	8	21	21	38	88

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Laurel St				Laurel St				Center St				Center St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	5	0
4:30 PM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
4:45 PM	0	0	4	1	0	0	3	0	0	0	0	0	0	0	0	0	8	22
5:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	21
5:15 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	20
5:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	16
5:45 PM	0	0	2	2	0	0	2	0	0	0	0	0	0	0	0	0	6	14
Count Total	0	0	16	4	0	0	16	0	0	0	0	0	0	0	0	0	36	0
Peak Hour	0	0	6	1	0	0	9	0	0	0	0	0	0	0	0	0	16	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Laurel St			Laurel St			Center St			Center St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	8	0	0	3	0	0	0	0	1	1	0	13	0				
4:15 PM	0	3	1	0	2	0	0	0	1	0	1	1	9	0				
4:30 PM	0	4	2	0	3	0	2	1	0	0	4	0	16	0				
4:45 PM	0	6	0	1	0	0	0	0	0	0	4	0	11	49				
5:00 PM	0	5	0	1	3	1	0	0	0	0	1	0	11	47				
5:15 PM	0	8	0	0	3	0	0	0	0	0	3	0	14	52				
5:30 PM	0	3	0	0	4	0	2	1	0	1	2	0	13	49				
5:45 PM	1	0	0	0	1	0	0	1	0	0	2	0	5	43				
Count Total	1	37	3	2	19	1	4	3	1	2	18	1	92	0				
Peak Hour	0	22	0	2	10	1	2	1	0	1	10	0	49	0				

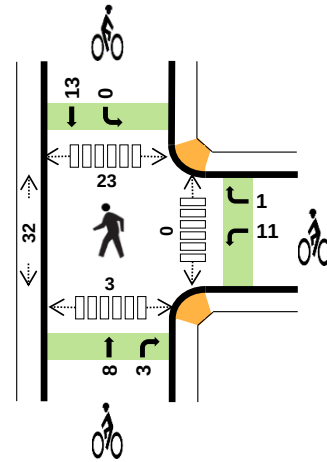
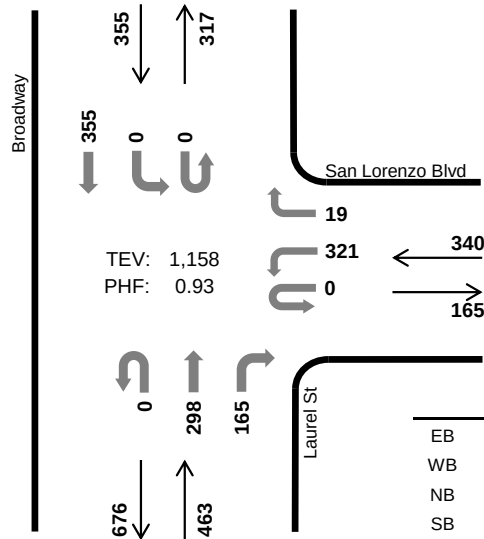
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Broadway San Lorenzo Blvd



Peak Hour

Date: 10/26/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	-	-
WB	2.6%	0.87
NB	4.1%	0.89
SB	3.7%	0.95
TOTAL	3.5%	0.93

Two-Hour Count Summaries

Interval Start		N/A				San Lorenzo Blvd				Laurel St				Broadway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	20	0	2	0	0	29	21	0	0	43	0	115	0
7:15 AM		0	0	0	0	0	34	0	2	0	0	21	26	0	0	35	0	118	0
7:30 AM		0	0	0	0	0	45	0	2	0	0	44	21	0	0	60	0	172	0
7:45 AM		0	0	0	0	0	77	0	1	0	0	69	35	0	0	76	0	258	663
8:00 AM		0	0	0	0	0	76	0	3	0	0	58	24	0	0	93	0	254	802
8:15 AM		0	0	0	0	0	90	0	8	0	0	84	37	0	0	87	0	306	990
8:30 AM		0	0	0	0	0	67	0	5	0	0	80	50	0	0	85	0	287	1,105
8:45 AM		0	0	0	0	0	88	0	3	0	0	76	54	0	0	90	0	311	1,158
Count Total		0	0	0	0	0	497	0	26	0	0	461	268	0	0	569	0	1,821	0
Peak Hour	All	0	0	0	0	0	321	0	19	0	0	298	165	0	0	355	0	1,158	0
	HV	0	0	0	0	0	9	0	0	0	0	15	4	0	0	13	0	41	0
	HV%	-	-	-	-	-	3%	-	0%	-	-	5%	2%	-	-	4%	-	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	4	2	6	0	0	0	0	0	0	20	19	1	40
7:15 AM	0	0	5	0	5	0	1	3	5	9	0	7	8	3	18
7:30 AM	0	2	4	3	9	0	0	1	3	4	0	13	7	2	22
7:45 AM	0	3	4	5	12	0	1	2	3	6	0	10	1	0	11
8:00 AM	0	4	4	4	12	0	4	1	5	10	0	10	6	1	17
8:15 AM	0	3	9	2	14	0	6	3	1	10	0	9	10	0	19
8:30 AM	0	1	2	3	6	0	2	5	3	10	0	8	5	1	14
8:45 AM	0	1	4	4	9	0	0	2	4	6	0	5	2	1	8
Count Total	0	14	36	23	73	0	14	17	24	55	0	82	58	9	149
Peak Hr	0	9	19	13	41	0	12	11	13	36	0	32	23	3	58

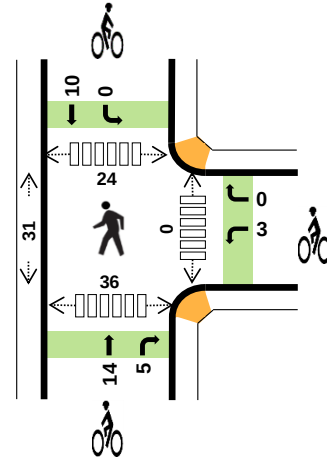
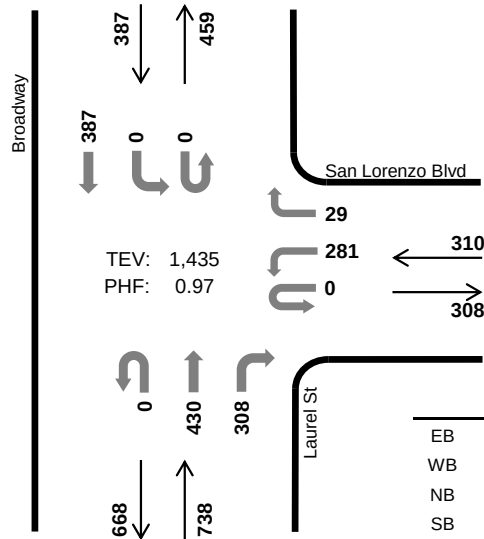
Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N/A				San Lorenzo Blvd				Laurel St				Broadway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	3	0	0	2	0	6	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	5	0
7:30 AM	0	0	0	0	0	2	0	0	0	0	3	1	0	0	3	0	9	0
7:45 AM	0	0	0	0	0	3	0	0	0	0	4	0	0	0	5	0	12	32
8:00 AM	0	0	0	0	0	4	0	0	0	0	3	1	0	0	4	0	12	38
8:15 AM	0	0	0	0	0	3	0	0	0	0	7	2	0	0	2	0	14	47
8:30 AM	0	0	0	0	0	1	0	0	0	0	1	1	0	0	3	0	6	44
8:45 AM	0	0	0	0	0	1	0	0	0	0	4	0	0	0	4	0	9	41
Count Total	0	0	0	0	0	14	0	0	0	0	26	10	0	0	23	0	73	0
Peak Hour	0	0	0	0	0	9	0	0	0	0	15	4	0	0	13	0	41	0
Two-Hour Count Summaries - Bikes																		
Interval Start	N/A			San Lorenzo Blvd			Laurel St			Broadway			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	1	0	0	0	3	0	0	5	0	9	0				
7:30 AM	0	0	0	0	0	0	0	0	1	0	3	0	4	0				
7:45 AM	0	0	0	1	0	0	0	1	1	0	3	0	6	19				
8:00 AM	0	0	0	4	0	0	0	0	1	0	5	0	10	29				
8:15 AM	0	0	0	6	0	0	0	2	1	0	1	0	10	30				
8:30 AM	0	0	0	1	0	1	0	4	1	0	3	0	10	36				
8:45 AM	0	0	0	0	0	0	0	2	0	0	4	0	6	36				
Count Total	0	0	0	13	0	1	0	12	5	0	24	0	55	0				
Peak Hour	0	0	0	11	0	1	0	8	3	0	13	0	36	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

Broadway San Lorenzo Blvd



Peak Hour

Date: 10/26/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	-	-
WB	1.0%	0.95
NB	1.2%	0.97
SB	1.0%	0.94
TOTAL	1.1%	0.97

Two-Hour Count Summaries

Interval Start		N/A				San Lorenzo Blvd				Laurel St				Broadway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	60	0	5	0	0	124	71	0	0	83	0	343	0
4:15 PM		0	0	0	0	0	59	0	6	0	0	112	93	0	0	77	0	347	0
4:30 PM		0	0	0	0	0	69	0	7	0	0	110	80	0	0	81	0	347	0
4:45 PM		0	0	0	0	0	73	0	6	0	0	116	75	0	0	95	0	365	1,402
5:00 PM		0	0	0	0	0	65	0	10	0	0	106	64	0	0	89	0	334	1,393
5:15 PM		0	0	0	0	0	63	0	11	0	0	102	89	0	0	103	0	368	1,414
5:30 PM		0	0	0	0	0	80	0	2	0	0	106	80	0	0	100	0	368	1,435
5:45 PM		0	0	0	0	0	66	0	8	0	0	106	72	0	0	103	0	355	1,425
Count Total		0	0	0	0	0	535	0	55	0	0	882	624	0	0	731	0	2,827	0
Peak Hour	All	0	0	0	0	0	281	0	29	0	0	430	308	0	0	387	0	1,435	0
	HV	0	0	0	0	0	3	0	0	0	0	4	5	0	0	4	0	16	0
	HV%	-	-	-	-	-	1%	-	0%	-	-	1%	2%	-	-	1%	-	1%	0

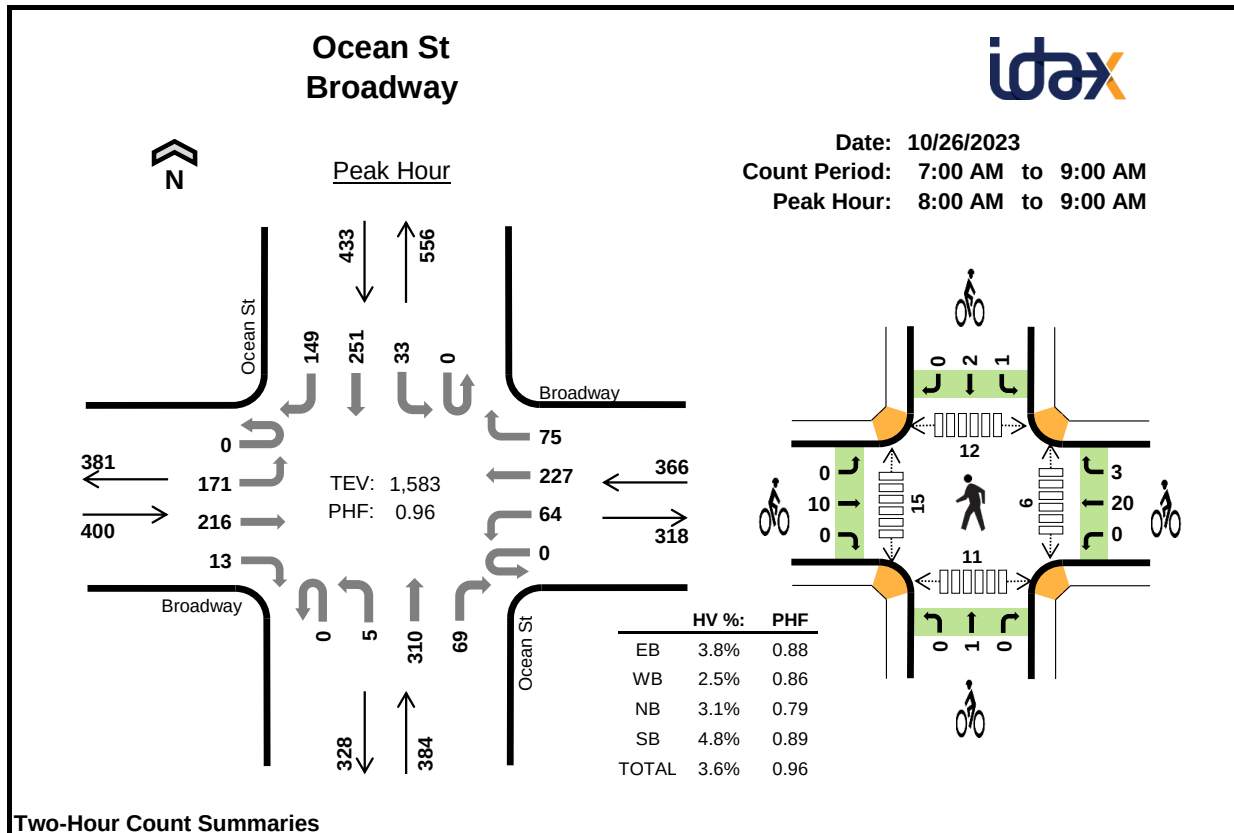
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	1	5	0	2	3	7	12	0	8	10	4	22
4:15 PM	0	4	2	0	6	0	1	7	1	9	0	10	8	1	19
4:30 PM	0	0	2	1	3	0	1	4	2	7	0	12	11	2	25
4:45 PM	0	2	5	1	8	0	1	6	0	7	0	10	8	10	28
5:00 PM	0	0	2	1	3	0	2	3	5	10	0	9	7	9	25
5:15 PM	0	1	1	1	3	0	0	6	4	10	0	7	4	4	15
5:30 PM	0	0	1	1	2	0	0	4	1	5	0	5	5	13	23
5:45 PM	0	1	1	1	3	0	0	3	4	7	0	18	9	6	33
Count Total	0	8	18	7	33	0	7	36	24	67	0	79	62	49	190
Peak Hr	0	3	9	4	16	0	3	19	10	32	0	31	24	36	91

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N/A				San Lorenzo Blvd				Laurel St				Broadway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	5	0
4:15 PM	0	0	0	0	0	4	0	0	0	0	1	1	0	0	0	0	6	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	3	0
4:45 PM	0	0	0	0	0	2	0	0	0	0	2	3	0	0	1	0	8	22
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	3	20
5:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	3	17
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	16
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	3	11
Count Total	0	0	0	0	0	8	0	0	0	0	10	8	0	0	7	0	33	0
Peak Hour	0	0	0	0	0	3	0	0	0	0	4	5	0	0	4	0	16	0

Two-Hour Count Summaries - Bikes																		
Interval Start	N/A			San Lorenzo Blvd			Laurel St			Broadway			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	2	0	0	3	0	7	0	12	0				
4:15 PM	0	0	0	1	0	0	0	4	3	0	1	0	9	0				
4:30 PM	0	0	0	1	0	0	0	4	0	0	2	0	7	0				
4:45 PM	0	0	0	1	0	0	0	5	1	0	0	0	7	35				
5:00 PM	0	0	0	2	0	0	0	3	0	0	5	0	10	33				
5:15 PM	0	0	0	0	0	0	0	4	2	0	4	0	10	34				
5:30 PM	0	0	0	0	0	0	0	2	2	0	1	0	5	32				
5:45 PM	0	0	0	0	0	0	0	2	1	0	4	0	7	32				
Count Total	0	0	0	5	0	2	0	24	12	0	24	0	67	0				
Peak Hour	0	0	0	3	0	0	0	14	5	0	10	0	32	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Broadway				Broadway				Ocean St				Ocean St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	28	18	1	0	8	28	11	1	0	49	8	0	6	24	21	203	0
7:15 AM		0	36	16	1	0	6	21	17	0	1	62	5	0	5	20	18	208	0
7:30 AM		0	38	32	4	0	5	38	17	0	2	81	9	0	7	36	25	294	0
7:45 AM		0	48	50	4	0	9	53	23	0	3	76	11	0	8	45	30	360	1,065
8:00 AM		0	34	47	5	0	10	58	14	0	1	94	26	0	8	47	35	379	1,241
8:15 AM		0	43	58	3	0	16	51	12	0	1	60	16	0	10	67	44	381	1,414
8:30 AM		0	42	50	4	0	24	59	23	0	1	91	15	0	9	59	33	410	1,530
8:45 AM		0	52	61	1	0	14	59	26	0	2	65	12	0	6	78	37	413	1,583
Count Total		0	321	332	23	0	92	367	143	1	11	578	102	0	59	376	243	2,648	0
Peak Hour	All	0	171	216	13	0	64	227	75	0	5	310	69	0	33	251	149	1,583	0
	HV	0	5	8	2	0	0	6	3	0	0	12	0	0	1	14	6	57	0
	HV%	-	3%	4%	15%	-	0%	3%	4%	-	0%	4%	0%	-	3%	6%	4%	4%	0

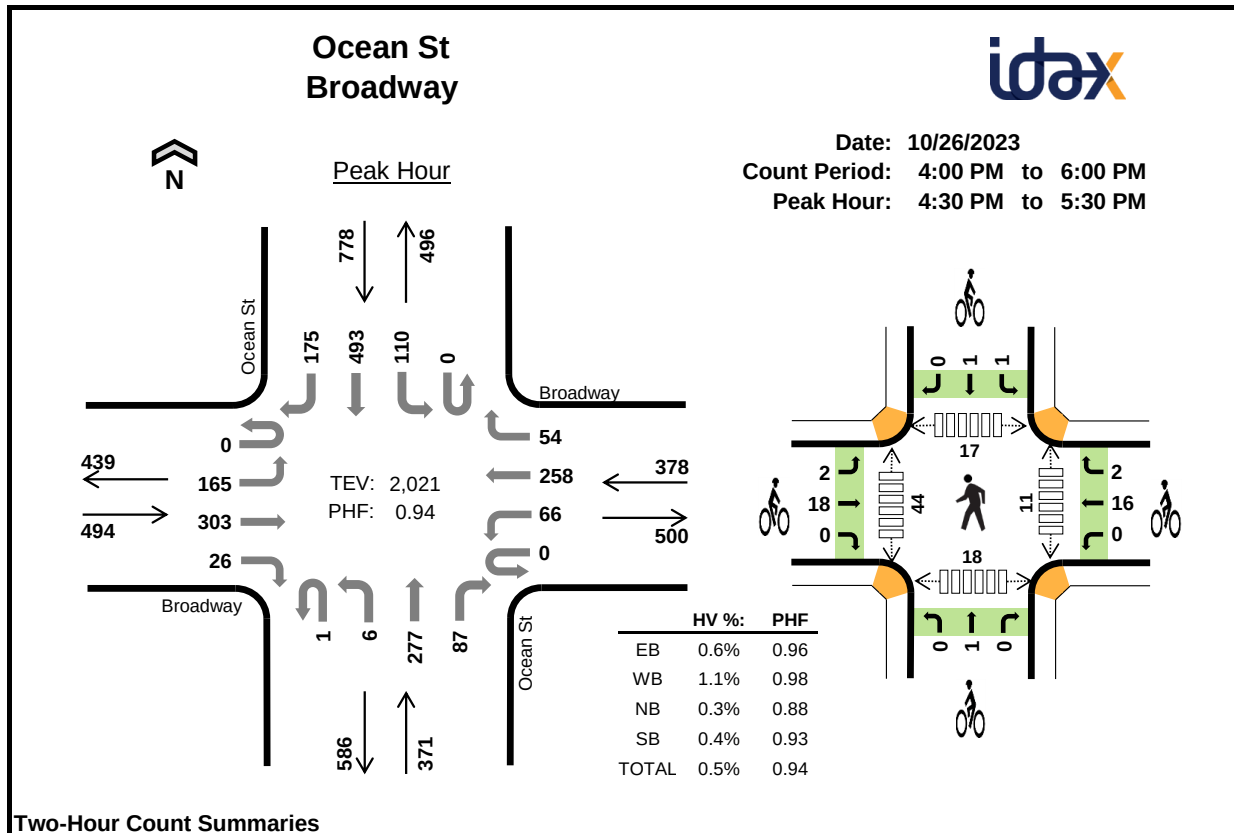
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	0	2	4	0	0	0	0	0	2	2	0	1	5
7:15 AM	5	2	3	5	15	2	5	0	0	7	2	2	3	4	11
7:30 AM	4	2	2	2	10	1	2	0	0	3	4	3	5	5	17
7:45 AM	4	2	2	6	14	1	5	0	0	6	2	2	6	0	10
8:00 AM	2	1	7	5	15	0	6	1	0	7	3	1	2	2	8
8:15 AM	8	1	0	6	15	5	7	0	1	13	2	9	1	0	12
8:30 AM	1	3	3	6	13	3	4	0	1	8	1	3	3	2	9
8:45 AM	4	4	2	4	14	2	6	0	1	9	0	2	6	7	15
Count Total	29	16	19	36	100	14	35	1	3	53	16	24	26	21	87
Peak Hour	15	9	12	21	57	10	23	1	3	37	6	15	12	11	44

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Broadway				Broadway				Ocean St				Ocean St				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	4	0
7:15 AM	0	1	3	1	0	0	1	1	0	1	2	0	0	0	3	2	15	0	0
7:30 AM	0	1	3	0	0	0	1	1	0	1	1	0	0	1	0	1	10	0	0
7:45 AM	0	2	1	1	0	0	2	0	0	1	1	0	0	1	1	4	14	43	0
8:00 AM	0	0	0	2	0	0	0	1	0	0	7	0	0	0	2	3	15	54	0
8:15 AM	0	3	5	0	0	0	1	0	0	0	0	0	0	1	3	2	15	54	0
8:30 AM	0	0	1	0	0	0	2	1	0	0	3	0	0	0	5	1	13	57	0
8:45 AM	0	2	2	0	0	0	3	1	0	0	2	0	0	0	4	0	14	57	0
Count Total	0	9	16	4	0	0	10	6	0	3	16	0	0	3	18	15	100	0	0
Peak Hour	0	5	8	2	0	0	6	3	0	0	12	0	0	1	14	6	57	0	0

Two-Hour Count Summaries - Bikes																			
Interval Start	Broadway			Broadway			Ocean St			Ocean St			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	5	0	0	0	0	0	0	0	0	0	0	7	0	0	0
7:30 AM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3	0	0	0
7:45 AM	0	1	0	0	4	1	0	0	0	0	0	0	0	0	0	6	16	0	0
8:00 AM	0	0	0	0	6	0	0	1	0	0	0	0	0	0	0	7	23	0	0
8:15 AM	0	5	0	0	7	0	0	0	0	0	0	0	1	0	0	13	29	0	0
8:30 AM	0	3	0	0	4	0	0	0	0	0	0	0	0	1	0	8	34	0	0
8:45 AM	0	2	0	0	3	3	0	0	0	0	0	0	0	1	0	9	37	0	0
Count Total	0	14	0	0	30	5	0	1	0	0	1	0	1	2	0	53	0	0	0
Peak Hour	0	10	0	0	20	3	0	1	0	0	1	0	1	2	0	37	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Interval Start		Broadway				Broadway				Ocean St				Ocean St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	47	88	4	0	14	61	15	0	0	46	19	0	29	106	46	475	0
4:15 PM		0	40	87	1	0	17	51	12	0	0	62	23	0	28	108	40	469	0
4:30 PM		0	37	77	10	0	19	62	15	1	1	71	32	0	34	137	39	535	0
4:45 PM		0	45	80	2	0	15	66	13	0	2	73	21	0	30	106	41	494	1,973
5:00 PM		0	46	75	7	0	14	65	13	0	2	61	19	0	23	132	42	499	1,997
5:15 PM		0	37	71	7	0	18	65	13	0	1	72	15	0	23	118	53	493	2,021
5:30 PM		0	36	73	4	0	14	74	16	0	1	64	18	0	28	124	53	505	1,991
5:45 PM		0	46	72	6	0	26	82	12	0	3	56	19	0	22	100	39	483	1,980
Count Total		0	334	623	41	0	137	526	109	1	10	505	166	0	217	931	353	3,953	0
Peak Hour	All	0	165	303	26	0	66	258	54	1	6	277	87	0	110	493	175	2,021	0
	HV	0	0	2	1	0	0	3	1	0	0	1	0	0	0	3	0	11	0
	HV%	-	0%	1%	4%	-	0%	1%	2%	0%	0%	0%	0%	-	0%	1%	0%	1%	0

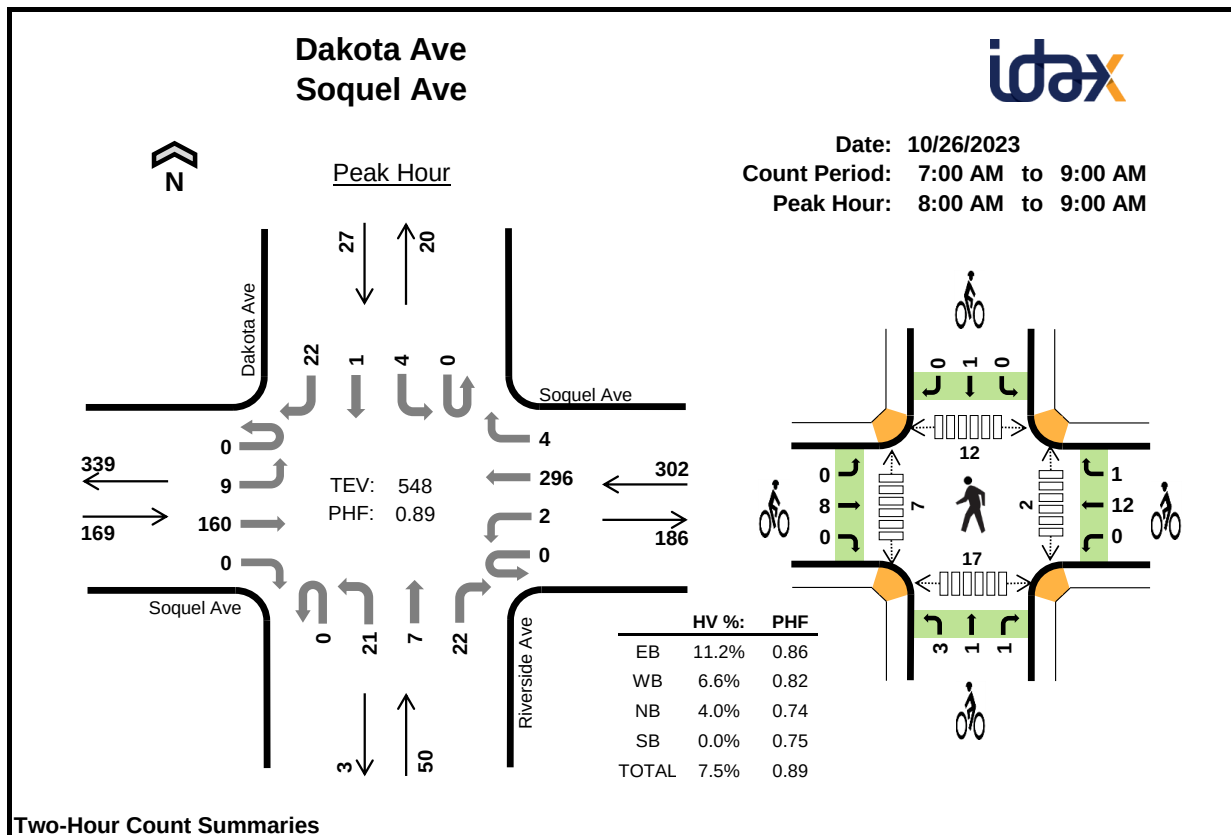
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	1	2	7	4	6	0	0	10	8	2	4	5	19
4:15 PM	1	0	2	2	5	3	1	0	0	4	7	13	5	1	26
4:30 PM	1	1	0	0	2	3	2	0	0	5	3	20	8	5	36
4:45 PM	0	1	0	2	3	4	4	0	1	9	4	5	4	8	21
5:00 PM	1	2	1	0	4	9	7	1	1	18	4	10	2	3	19
5:15 PM	1	0	0	1	2	4	5	0	0	9	0	9	3	2	14
5:30 PM	1	0	1	2	4	2	1	0	1	4	2	5	2	3	12
5:45 PM	0	2	1	0	3	2	6	3	1	12	3	6	4	5	18
Count Total	8	7	6	9	30	31	32	4	4	71	31	70	32	32	165
Peak Hour	3	4	1	3	11	20	18	1	2	41	11	44	17	18	90

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Broadway				Broadway				Ocean St				Ocean St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	0	1	0	0	0	1	0	0	1	1	0	7	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	5	0
4:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3	17
5:00 PM	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	0	4	14
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	11
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	4	13
5:45 PM	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	3	13
Count Total	0	2	5	1	0	1	5	1	0	0	5	1	0	1	7	1	30	0
Peak Hour	0	0	2	1	0	0	3	1	0	0	1	0	0	0	3	0	11	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Broadway			Broadway			Ocean St			Ocean St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	4	0	0	6	0	0	0	0	0	0	0	10	0			
4:15 PM	0	3	0	0	1	0	0	0	0	0	0	0	4	0			
4:30 PM	0	3	0	0	2	0	0	0	0	0	0	0	5	0			
4:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	9	28			
5:00 PM	2	7	0	0	5	2	0	1	0	1	0	0	18	36			
5:15 PM	0	4	0	0	5	0	0	0	0	0	0	0	9	41			
5:30 PM	0	2	0	0	1	0	0	0	0	1	0	0	4	40			
5:45 PM	1	1	0	1	5	0	0	3	0	0	0	1	12	43			
Count Total	3	28	0	1	29	2	0	4	0	2	1	1	71	0			
Peak Hour	2	18	0	0	16	2	0	1	0	1	1	0	41	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Riverside Ave				Dakota Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	14	1	0	1	24	0	0	1	0	2	0	0	0	2	45	0
7:15 AM		0	0	14	0	0	0	29	2	0	3	0	7	0	1	0	2	58	0
7:30 AM		0	2	30	0	0	0	50	2	0	3	0	3	0	1	0	3	94	0
7:45 AM		0	1	23	0	0	1	54	1	0	4	0	6	0	1	0	4	95	292
8:00 AM		0	0	38	0	0	0	52	0	0	3	1	3	0	0	0	9	106	353
8:15 AM		0	1	41	0	0	0	91	0	0	8	0	9	0	0	0	4	154	449
8:30 AM		0	4	36	0	0	2	87	3	0	7	2	3	0	2	0	4	150	505
8:45 AM		0	4	45	0	0	0	66	1	0	3	4	7	0	2	1	5	138	548
Count Total		0	12	241	1	0	4	453	9	0	32	7	40	0	7	1	33	840	0
Peak Hour	All	0	9	160	0	0	2	296	4	0	21	7	22	0	4	1	22	548	0
	HV	0	0	19	0	0	0	20	0	0	0	1	1	0	0	0	0	41	0
	HV%	-	0%	12%	-	-	0%	7%	0%	-	0%	14%	5%	-	0%	0%	0%	7%	0

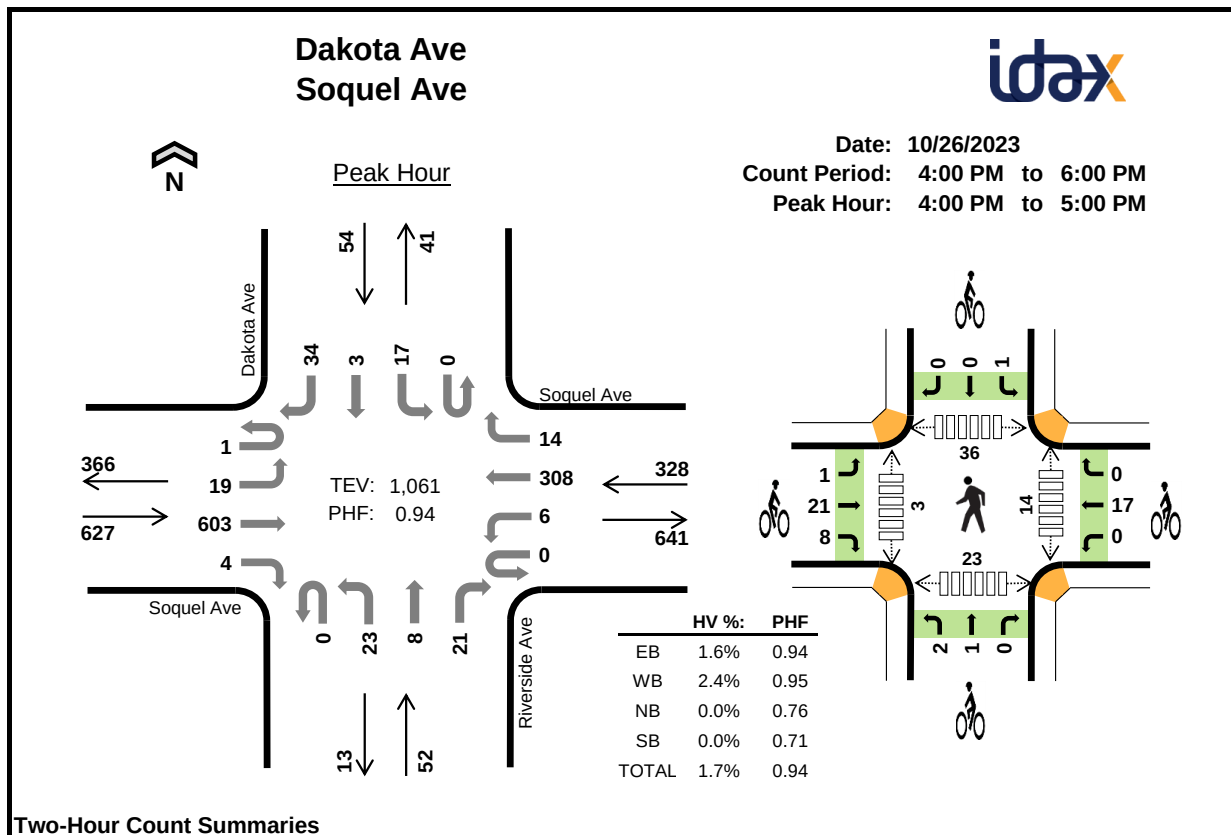
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	2	1	0	8	0	0	0	0	0	0	3	1	3	7
7:15 AM	2	8	1	0	11	0	3	1	0	4	0	0	2	1	3
7:30 AM	6	7	0	1	14	2	1	0	0	3	1	3	5	6	15
7:45 AM	0	7	1	0	8	1	4	1	0	6	1	4	3	1	9
8:00 AM	6	3	0	0	9	1	8	0	0	9	0	2	2	1	5
8:15 AM	6	10	0	0	16	3	2	1	0	6	0	3	6	5	14
8:30 AM	5	4	0	0	9	3	3	2	0	8	0	1	2	4	7
8:45 AM	2	3	2	0	7	1	0	2	1	4	2	1	2	7	12
Count Total	32	44	5	1	82	11	21	7	1	40	4	17	23	28	72
Peak Hour	19	20	2	0	41	8	13	5	1	27	2	7	12	17	38

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Soquel Ave				Soquel Ave				Riverside Ave				Dakota Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	5	0	0	0	2	0	0	1	0	0	0	0	0	0	0	8	0
7:15 AM	0	0	2	0	0	0	6	2	0	0	0	1	0	0	0	0	0	11	0
7:30 AM	0	0	6	0	0	0	6	1	0	0	0	0	0	0	0	1	0	14	0
7:45 AM	0	0	0	0	0	1	6	0	0	1	0	0	0	0	0	0	0	8	41
8:00 AM	0	0	6	0	0	0	3	0	0	0	0	0	0	0	0	0	0	9	42
8:15 AM	0	0	6	0	0	0	10	0	0	0	0	0	0	0	0	0	0	16	47
8:30 AM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9	42
8:45 AM	0	0	2	0	0	0	3	0	0	0	1	1	0	0	0	0	0	7	41
Count Total	0	0	32	0	0	1	40	3	0	2	1	2	0	0	0	1	0	82	0
Peak Hour	0	0	19	0	0	0	20	0	0	0	1	1	0	0	0	0	0	41	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Riverside Ave			Dakota Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	0	3	0	0	0	1	0	0	0	4	0				
7:30 AM	1	1	0	0	1	0	0	0	0	0	0	0	3	0				
7:45 AM	0	1	0	0	4	0	0	1	0	0	0	0	6	13				
8:00 AM	0	1	0	0	7	1	0	0	0	0	0	0	9	22				
8:15 AM	0	3	0	0	2	0	1	0	0	0	0	0	6	24				
8:30 AM	0	3	0	0	3	0	1	0	1	0	0	0	8	29				
8:45 AM	0	1	0	0	0	0	1	1	0	0	1	0	4	27				
Count Total	1	10	0	0	20	1	3	2	2	0	1	0	40	0				
Peak Hour	0	8	0	0	12	1	3	1	1	0	1	0	27	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Riverside Ave				Dakota Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	5	158	3	0	1	82	2	0	3	6	8	0	5	1	7	281	0
4:15 PM		1	4	161	0	0	1	67	6	0	5	0	4	0	3	1	5	258	0
4:30 PM		0	6	150	0	0	0	79	4	0	5	1	5	0	6	1	12	269	0
4:45 PM		0	4	134	1	0	4	80	2	0	10	1	4	0	3	0	10	253	1,061
5:00 PM		0	3	146	3	0	0	81	7	0	3	4	7	0	8	0	11	273	1,053
5:15 PM		0	6	126	3	1	2	91	2	0	9	1	5	0	4	0	13	263	1,058
5:30 PM		0	9	116	1	0	3	91	5	0	4	0	4	0	6	0	4	243	1,032
5:45 PM		0	6	97	0	0	1	91	3	0	6	3	7	2	5	2	8	231	1,010
Count Total		1	43	1,088	11	1	12	662	31	0	45	16	44	2	40	5	70	2,071	0
Peak Hour	All	1	19	603	4	0	6	308	14	0	23	8	21	0	17	3	34	1,061	0
	HV	0	1	9	0	0	0	7	1	0	0	0	0	0	0	0	0	18	0
	HV%	0%	5%	1%	0%	-	0%	2%	7%	-	0%	0%	0%	-	0%	0%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	0	0	3	8	4	1	0	13	5	1	7	4	17
4:15 PM	3	2	0	0	5	9	2	1	0	12	4	0	11	5	20
4:30 PM	4	3	0	0	7	6	5	1	0	12	1	2	7	10	20
4:45 PM	1	2	0	0	3	7	6	0	1	14	4	0	11	4	19
5:00 PM	1	3	0	0	4	6	3	0	2	11	5	6	4	9	24
5:15 PM	0	2	0	0	2	8	1	1	0	10	1	1	7	9	18
5:30 PM	2	3	0	0	5	5	4	1	0	10	1	6	6	15	28
5:45 PM	2	3	0	0	5	11	1	4	0	16	2	6	10	16	34
Count Total	15	19	0	0	34	60	26	9	3	98	23	22	63	72	180
Peak Hour	10	8	0	0	18	30	17	3	1	51	14	3	36	23	76

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Riverside Ave				Dakota Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	5	0
4:30 PM	0	1	3	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0
4:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	18
5:00 PM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	19
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	16
5:30 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	14
5:45 PM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	16
Count Total	0	1	14	0	0	0	18	1	0	0	0	0	0	0	0	0	34	0
Peak Hour	0	1	9	0	0	0	7	1	0	0	0	0	0	0	0	0	18	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Riverside Ave			Dakota Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	1	4	3	0	4	0	1	0	0	0	0	0	13	0				
4:15 PM	0	7	2	0	2	0	0	1	0	0	0	0	12	0				
4:30 PM	0	5	1	0	5	0	1	0	0	0	0	0	12	0				
4:45 PM	0	5	2	0	6	0	0	0	0	1	0	0	14	51				
5:00 PM	0	4	2	0	3	0	0	0	0	0	2	0	11	49				
5:15 PM	0	6	2	0	0	1	0	1	0	0	0	0	10	47				
5:30 PM	1	3	1	0	4	0	0	0	1	0	0	0	10	45				
5:45 PM	0	11	0	0	1	0	3	0	1	0	0	0	16	47				
Count Total	2	45	13	0	25	1	5	2	2	1	2	0	98	0				
Peak Hour	1	21	8	0	17	0	2	1	0	1	0	0	51	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



ALL TRAFFIC DATA SERVICES

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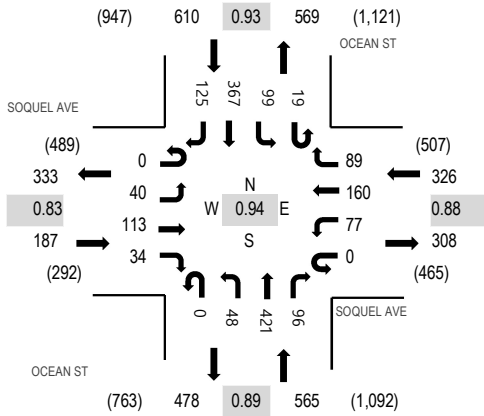
Location: 12 OCEAN ST & SOQUEL AVE AM

Date: Tuesday, April 25, 2023

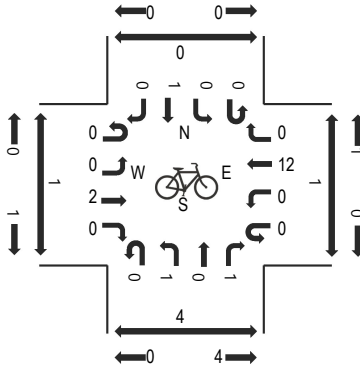
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

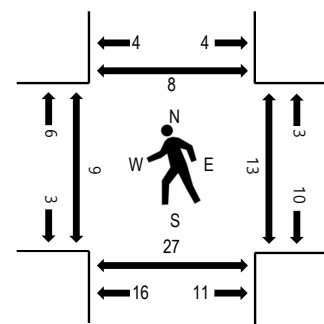
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SOQUEL AVE Eastbound				SOQUEL AVE Westbound				OCEAN ST Northbound				OCEAN ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	6	11	3	0	10	8	13	0	4	89	8	2	5	45	16	220	1,150	3	1	5	1
7:15 AM	0	6	18	2	0	7	14	16	0	4	92	16	3	10	50	16	254	1,312	1	2	0	2
7:30 AM	0	10	14	5	0	8	16	20	0	8	117	18	2	9	61	11	299	1,507	1	3	2	0
7:45 AM	0	4	19	7	0	14	32	23	0	8	145	18	4	11	73	19	377	1,636	1	1	1	1
8:00 AM	0	7	23	7	0	18	20	19	0	7	100	27	2	22	104	26	382	1,688	2	5	2	1
8:15 AM	0	7	32	11	0	23	51	19	0	15	117	31	5	27	82	29	449		2	4	11	3
8:30 AM	0	17	32	7	0	18	40	26	0	9	100	15	10	24	97	33	428		1	1	7	1
8:45 AM	0	9	26	9	0	18	49	25	0	17	104	23	2	26	84	37	429		4	3	7	3

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Lights	0	38	107	32	0	77	153	87	0	48	415	96	19	97	354	122	1,645
Mediums	0	2	6	2	0	0	7	2	0	0	6	0	0	2	13	2	42
Total	0	40	113	34	0	77	160	89	0	48	421	96	19	99	367	125	1,688



ALL TRAFFIC DATA SERVICES

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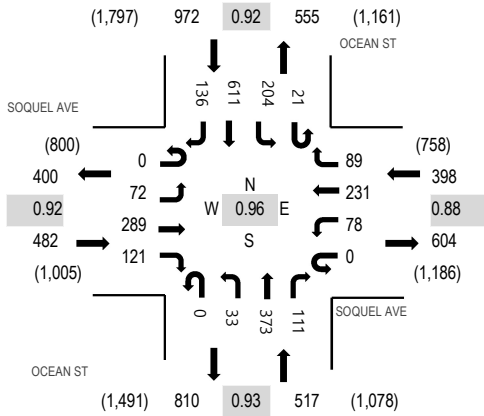
Location: 12 OCEAN ST & SOQUEL AVE PM

Date: Tuesday, April 25, 2023

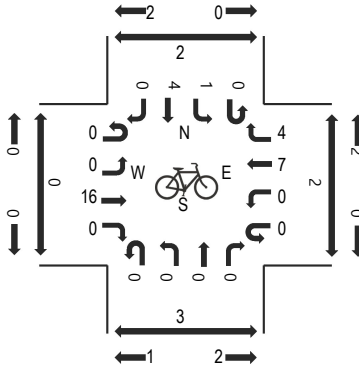
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

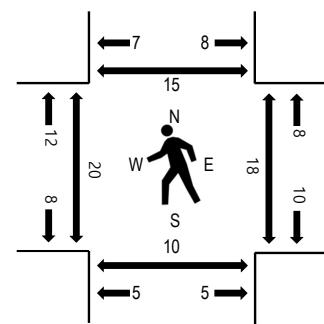
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SOQUEL AVE Eastbound				SOQUEL AVE Westbound				OCEAN ST Northbound				OCEAN ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	23	96	21	0	14	65	18	0	12	115	27	4	36	118	40	589	2,333	6	1	8	6
4:15 PM	0	24	72	27	0	16	43	20	0	16	103	33	6	37	145	32	574	2,358	1	2	5	2
4:30 PM	0	18	64	34	0	21	53	26	0	6	105	25	7	57	143	33	592	2,369	4	6	3	3
4:45 PM	0	16	75	29	0	19	73	21	0	7	97	26	2	28	145	40	578	2,358	5	4	3	4
5:00 PM	0	23	77	32	0	21	50	24	0	13	84	27	4	67	165	27	614	2,305	4	1	0	2
5:15 PM	0	15	73	26	0	17	55	18	0	7	87	33	8	52	158	36	585		7	7	4	6
5:30 PM	0	24	92	21	0	21	58	22	0	11	103	26	5	39	129	30	581		2	1	5	8
5:45 PM	0	24	65	34	0	12	44	27	2	11	83	19	5	40	121	38	525		3	4	8	5

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	71	284	121	0	78	227	88	0	33	372	111	21	203	606	133	2,348
Mediums	0	1	5	0	0	0	4	1	0	0	1	0	0	1	5	3	21
Total	0	72	289	121	0	78	231	89	0	33	373	111	21	204	611	136	2,369

Branciforte Ave Soquel Ave

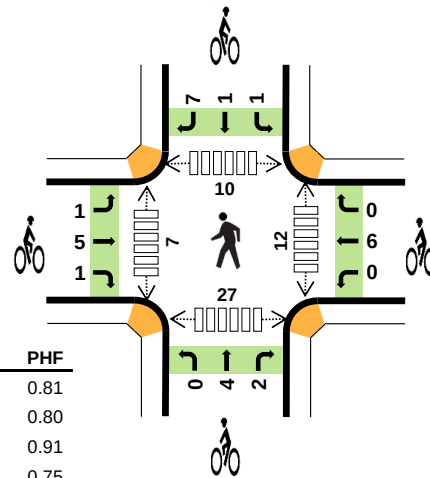
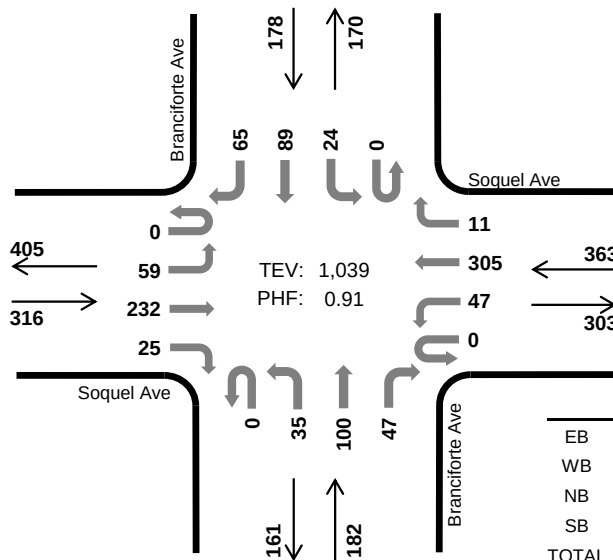


Peak Hour

Date: 10/26/2023

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 8:00 AM to 9:00 AM



Two-Hour Count Summaries

Interval Start		Soquel Ave				Soquel Ave				Branciforte Ave				Branciforte Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	2	23	4	0	8	20	2	0	7	4	4	0	2	10	4	90	0
7:15 AM		0	3	32	2	0	8	31	2	0	1	9	4	0	3	8	3	106	0
7:30 AM		0	8	39	3	0	8	36	4	0	3	15	7	0	1	11	12	147	0
7:45 AM		0	12	45	5	1	12	48	3	0	2	20	8	0	3	13	7	179	522
8:00 AM		0	17	58	4	0	9	49	1	0	10	19	13	0	7	23	14	224	656
8:15 AM		0	10	49	4	0	8	94	4	0	8	28	12	0	5	24	15	261	811
8:30 AM		0	18	73	7	0	15	94	5	0	4	30	8	0	2	17	12	285	949
8:45 AM		0	14	52	10	0	15	68	1	0	13	23	14	0	10	25	24	269	1,039
Count Total		0	84	371	39	1	83	440	22	0	48	148	70	0	33	131	91	1,561	0
Peak Hour	All	0	59	232	25	0	47	305	11	0	35	100	47	0	24	89	65	1,039	0
	HV	0	3	18	0	0	1	10	2	0	0	0	2	0	2	2	0	40	0
	HV%	-	5%	8%	0%	-	2%	3%	18%	-	0%	0%	4%	-	8%	2%	0%	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	1	0	5	9	1	0	0	1	2	1	0	1	5	7
7:15 AM	0	6	0	0	6	0	1	0	0	1	2	0	1	5	8
7:30 AM	5	2	0	0	7	1	2	0	1	4	1	0	1	4	6
7:45 AM	2	1	2	2	7	0	1	0	0	1	0	0	2	5	7
8:00 AM	5	1	0	2	8	1	2	1	4	8	3	0	2	7	12
8:15 AM	5	6	1	0	12	2	1	2	3	8	3	2	2	3	10
8:30 AM	5	3	0	0	8	1	1	1	2	5	4	4	3	9	20
8:45 AM	6	3	1	2	12	3	2	2	0	7	2	1	3	8	14
Count Total	31	23	4	11	69	9	10	6	11	36	16	7	15	46	84
Peak Hour	21	13	2	4	40	7	6	6	9	28	12	7	10	27	56

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Branciforte Ave				Branciforte Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	1	0	0	1	0	0	0	0	0	0	0	5	0	9	0
7:15 AM	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	6	0
7:30 AM	0	1	3	1	0	0	2	0	0	0	0	0	0	0	0	0	7	0
7:45 AM	0	2	0	0	0	1	0	0	0	0	1	1	0	0	2	0	7	29
8:00 AM	0	1	4	0	0	1	0	0	0	0	0	0	0	1	1	0	8	28
8:15 AM	0	1	4	0	0	0	5	1	0	0	0	1	0	0	0	0	12	34
8:30 AM	0	1	4	0	0	0	2	1	0	0	0	0	0	0	0	0	8	35
8:45 AM	0	0	6	0	0	0	3	0	0	0	0	1	0	1	1	0	12	40
Count Total	0	6	23	2	0	3	18	2	0	0	1	3	0	2	9	0	69	0
Peak Hour	0	3	18	0	0	1	10	2	0	0	0	2	0	2	2	0	40	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Branciforte Ave			Branciforte Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	1	0	0	0	0	0	0	1	0	0	2	0				
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
7:30 AM	0	0	1	1	1	0	0	0	0	0	0	1	4	0				
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	8				
8:00 AM	1	0	0	0	2	0	0	1	0	0	0	4	8	14				
8:15 AM	0	2	0	0	1	0	0	2	0	1	1	1	8	21				
8:30 AM	0	1	0	0	1	0	0	0	1	0	0	2	5	22				
8:45 AM	0	2	1	0	2	0	0	1	1	0	0	0	7	28				
Count Total	1	5	3	1	9	0	0	4	2	2	1	8	36	0				
Peak Hour	1	5	1	0	6	0	0	4	2	1	1	7	28	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Branciforte Ave Soquel Ave

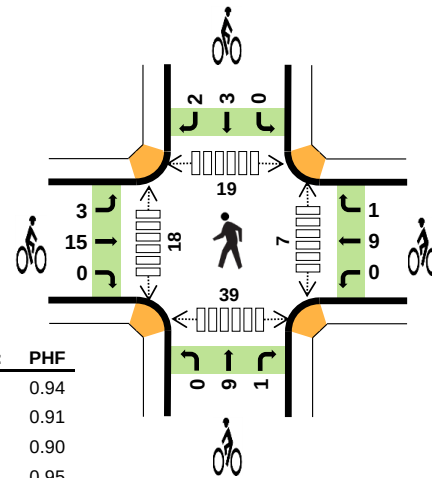
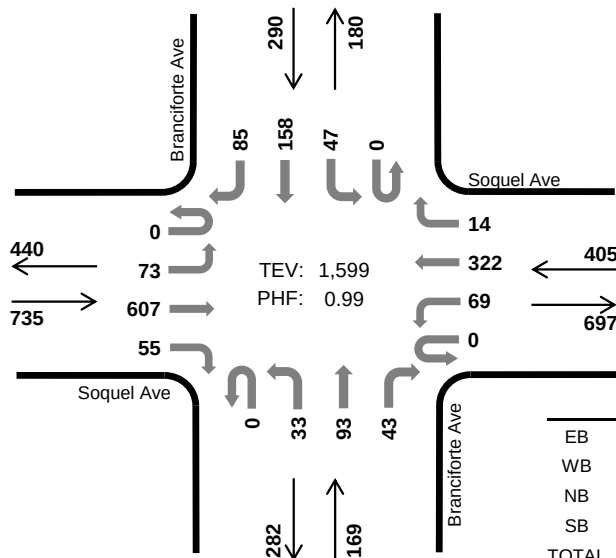


Peak Hour

Date: 10/26/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:00 PM to 5:00 PM



Two-Hour Count Summaries

Interval Start		Soquel Ave				Soquel Ave				Branciforte Ave				Branciforte Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	22	154	18	0	16	83	2	0	9	15	7	0	16	35	21	398	0
4:15 PM		0	18	156	14	0	23	73	3	0	12	22	13	0	13	37	21	405	0
4:30 PM		0	21	161	14	0	14	77	3	0	4	29	11	0	9	43	19	405	0
4:45 PM		0	12	136	9	0	16	89	6	0	8	27	12	0	9	43	24	391	1,599
5:00 PM		0	16	161	18	0	12	63	9	0	6	24	11	0	10	33	24	387	1,588
5:15 PM		0	26	143	21	0	9	79	10	0	8	27	14	0	16	28	19	400	1,583
5:30 PM		0	9	117	12	0	15	75	5	0	4	18	9	0	16	35	13	328	1,506
5:45 PM		0	14	106	14	0	29	79	6	0	4	17	5	0	10	21	19	324	1,439
Count Total		0	138	1,134	120	0	134	618	44	0	55	179	82	0	99	275	160	3,038	0
Peak Hour	All	0	73	607	55	0	69	322	14	0	33	93	43	0	47	158	85	1,599	0
	HV	0	0	5	0	0	0	7	0	0	0	0	0	0	1	1	2	16	0
	HV%	-	0%	1%	0%	-	0%	2%	0%	-	0%	0%	0%	-	2%	1%	2%	1%	0

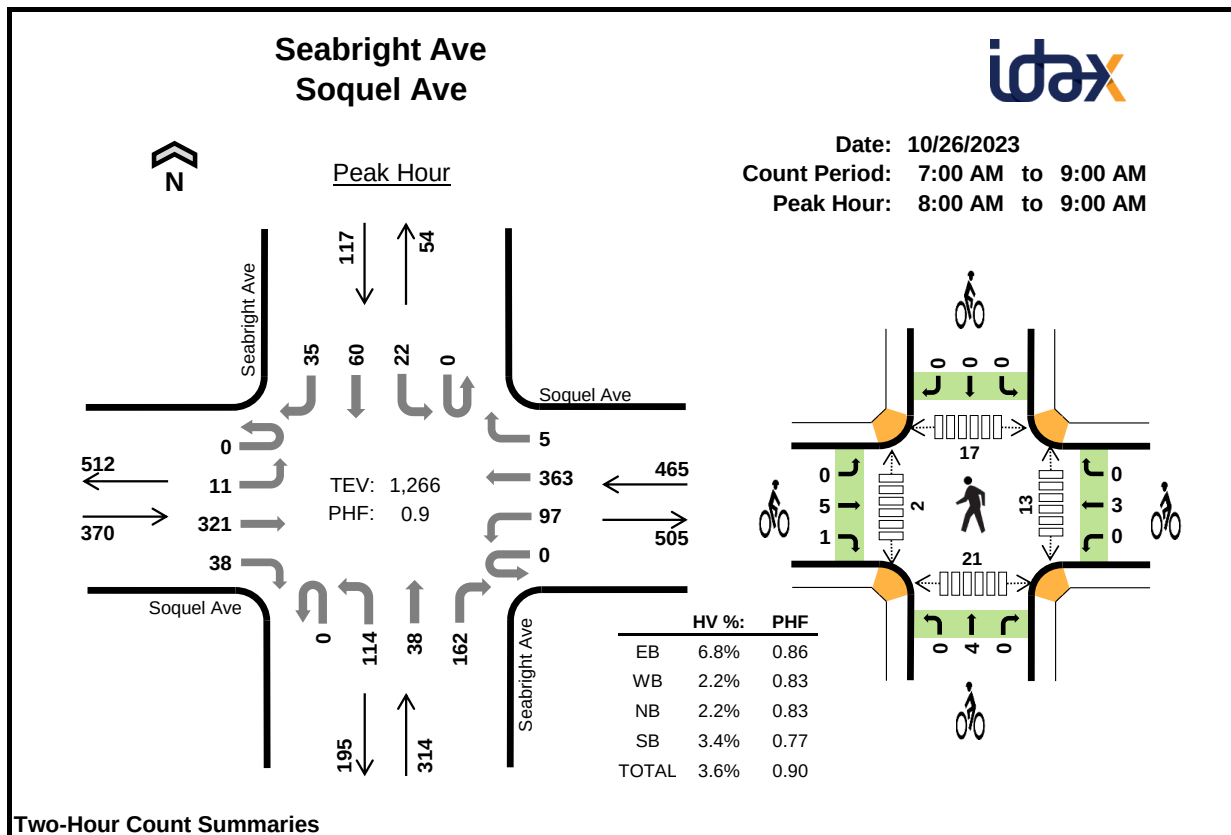
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	1	0	0	2	1	5	1	0	7	0	6	7	7	20
4:15 PM	1	2	0	1	4	7	1	3	1	12	3	3	4	14	24
4:30 PM	3	2	0	3	8	2	2	4	4	12	2	5	2	6	15
4:45 PM	0	2	0	0	2	8	2	2	0	12	2	4	6	12	24
5:00 PM	3	0	1	0	4	10	5	1	1	17	0	4	3	13	20
5:15 PM	0	1	0	0	1	7	1	4	0	12	1	5	1	5	12
5:30 PM	1	1	0	0	2	2	0	0	1	3	3	4	6	7	20
5:45 PM	0	0	0	0	0	5	0	1	0	6	4	4	2	8	18
Count Total	9	9	1	4	23	42	16	16	7	81	15	35	31	72	153
Peak Hour	5	7	0	4	16	18	10	10	5	43	7	18	19	39	83

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Branciforte Ave				Branciforte Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	1	4	0
4:30 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	1	1	1	8	0
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	16
5:00 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	4	18
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	15
5:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Count Total	0	0	9	0	0	0	9	0	0	0	1	0	0	1	1	2	23	0
Peak Hour	0	0	5	0	0	0	7	0	0	0	0	0	0	1	1	2	16	0

Two-Hour Count Summaries - Bikes																
Interval Start	Soquel Ave			Soquel Ave			Branciforte Ave			Branciforte Ave				15-min Total	Rolling One Hour	
	Eastbound			Westbound			Northbound			Southbound						
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT				
4:00 PM	1	0	0	0	5	0	0	1	0	0	0	0	7	0		
4:15 PM	0	7	0	0	1	0	0	3	0	0	0	1	12	0		
4:30 PM	1	1	0	0	1	1	0	3	1	0	3	1	12	0		
4:45 PM	1	7	0	0	2	0	0	2	0	0	0	0	12	43		
5:00 PM	3	6	1	1	4	0	0	1	0	0	0	1	17	53		
5:15 PM	1	5	1	0	1	0	0	2	2	0	0	0	12	53		
5:30 PM	0	1	1	0	0	0	0	0	0	0	1	0	3	44		
5:45 PM	0	5	0	0	0	0	0	1	0	0	0	0	6	38		
Count Total	7	32	3	1	14	1	0	13	3	0	4	3	81	0		
Peak Hour	3	15	0	0	9	1	0	9	1	0	3	2	43	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Seabright Ave				Seabright Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	35	4	0	16	33	0	0	6	3	16	0	0	2	0	116	0
7:15 AM		0	3	43	4	0	11	38	1	0	11	5	21	0	3	3	2	145	0
7:30 AM		0	1	54	5	0	18	46	1	0	14	11	22	0	2	4	1	179	0
7:45 AM		0	1	71	7	0	24	66	2	0	18	8	44	0	2	9	0	252	692
8:00 AM		0	5	76	8	0	23	75	1	0	21	12	36	0	4	19	3	283	859
8:15 AM		0	1	76	7	0	23	116	1	0	24	7	39	0	4	16	8	322	1,036
8:30 AM		0	4	93	10	0	22	89	2	0	34	9	52	0	10	13	15	353	1,210
8:45 AM		0	1	76	13	0	29	83	1	0	35	10	35	0	4	12	9	308	1,266
Count Total		0	17	524	58	0	166	546	9	0	163	65	265	0	29	78	38	1,958	0
Peak Hour	All	0	11	321	38	0	97	363	5	0	114	38	162	0	22	60	35	1,266	0
	HV	0	0	22	3	0	0	10	0	0	5	0	2	0	0	1	3	46	0
	HV%	-	0%	7%	8%	-	0%	3%	0%	-	4%	0%	1%	-	0%	2%	9%	4%	0

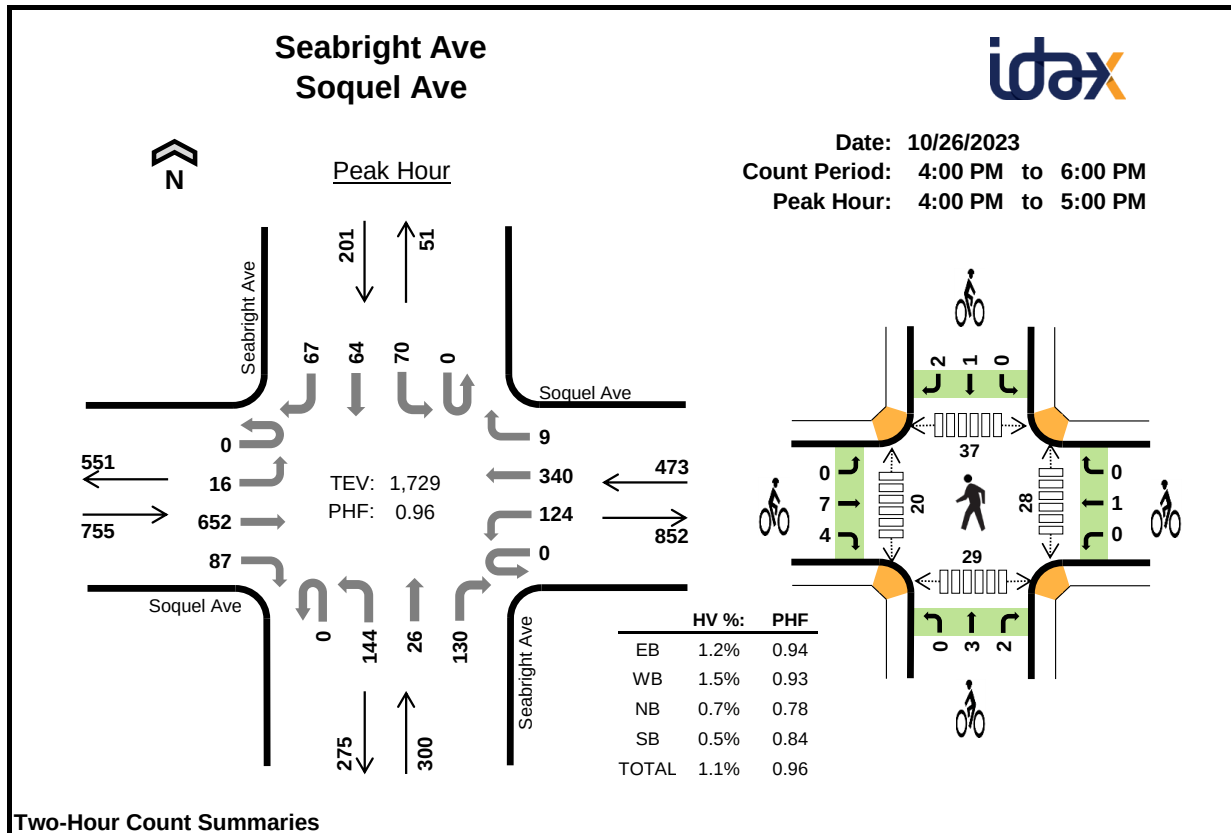
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	4	2	0	6	0	1	2	0	3	0	1	3	3	7
7:30 AM	3	2	2	0	7	0	0	0	0	0	0	0	4	4	8
7:45 AM	2	2	0	1	5	0	0	1	0	1	2	0	4	2	8
8:00 AM	5	2	1	1	9	1	1	1	0	3	2	0	2	3	7
8:15 AM	6	5	2	1	14	3	0	1	0	4	4	0	9	4	17
8:30 AM	5	1	2	1	9	1	0	2	0	3	6	2	3	8	19
8:45 AM	9	2	2	1	14	1	2	0	0	3	1	0	3	6	10
Count Total	33	20	11	5	69	6	4	7	0	17	15	3	28	30	76
Peak Hour	25	10	7	4	46	6	3	4	0	13	13	2	17	21	53

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Seabright Ave				Seabright Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	1	1	0	0	0	0	0	0	0	0	0	5	0
7:15 AM	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	0	6	0
7:30 AM	0	0	3	0	0	0	2	0	0	2	0	0	0	0	0	0	7	0
7:45 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	5	23
8:00 AM	0	0	4	1	0	0	2	0	0	1	0	0	0	0	0	1	9	27
8:15 AM	0	0	5	1	0	0	5	0	0	1	0	1	0	0	0	1	14	35
8:30 AM	0	0	5	0	0	0	1	0	0	1	0	1	0	0	0	1	9	37
8:45 AM	0	0	8	1	0	0	2	0	0	2	0	0	0	0	0	1	14	46
Count Total	0	0	30	3	0	1	19	0	0	9	0	2	0	0	2	3	69	0
Peak Hour	0	0	22	3	0	0	10	0	0	5	0	2	0	0	1	3	46	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Seabright Ave			Seabright Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	0	1	0	0	1	1	0	0	0	3	0				
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	4				
8:00 AM	0	1	0	0	1	0	0	1	0	0	0	0	3	7				
8:15 AM	0	2	1	0	0	0	0	1	0	0	0	0	4	8				
8:30 AM	0	1	0	0	0	0	0	2	0	0	0	0	3	11				
8:45 AM	0	1	0	0	2	0	0	0	0	0	0	0	3	13				
Count Total	0	5	1	0	4	0	0	5	2	0	0	0	17	0				
Peak Hour	0	5	1	0	3	0	0	4	0	0	0	0	13	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Seabright Ave				Seabright Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	162	25	0	32	81	3	0	45	7	44	0	20	12	16	447	0
4:15 PM		0	1	174	15	0	39	84	4	0	37	3	34	0	22	19	19	451	0
4:30 PM		0	8	169	24	0	26	80	1	0	29	10	27	0	19	15	14	422	0
4:45 PM		0	7	147	23	0	27	95	1	0	33	6	25	0	9	18	18	409	1,729
5:00 PM		0	1	177	27	0	22	79	4	0	30	4	38	0	18	15	20	435	1,717
5:15 PM		0	1	155	21	0	34	88	3	0	33	7	34	0	18	19	21	434	1,700
5:30 PM		0	6	106	17	0	32	83	1	0	34	8	34	0	10	12	27	370	1,648
5:45 PM		0	3	103	14	0	37	97	1	0	31	7	25	0	11	21	20	370	1,609
Count Total		0	27	1,193	166	0	249	687	18	0	272	52	261	0	127	131	155	3,338	0
Peak Hour	All	0	16	652	87	0	124	340	9	0	144	26	130	0	70	64	67	1,729	0
	HV	0	0	9	0	0	2	5	0	0	2	0	0	0	0	1	0	19	0
	HV%	-	0%	1%	0%	-	2%	1%	0%	-	1%	0%	0%	-	0%	2%	0%	1%	0

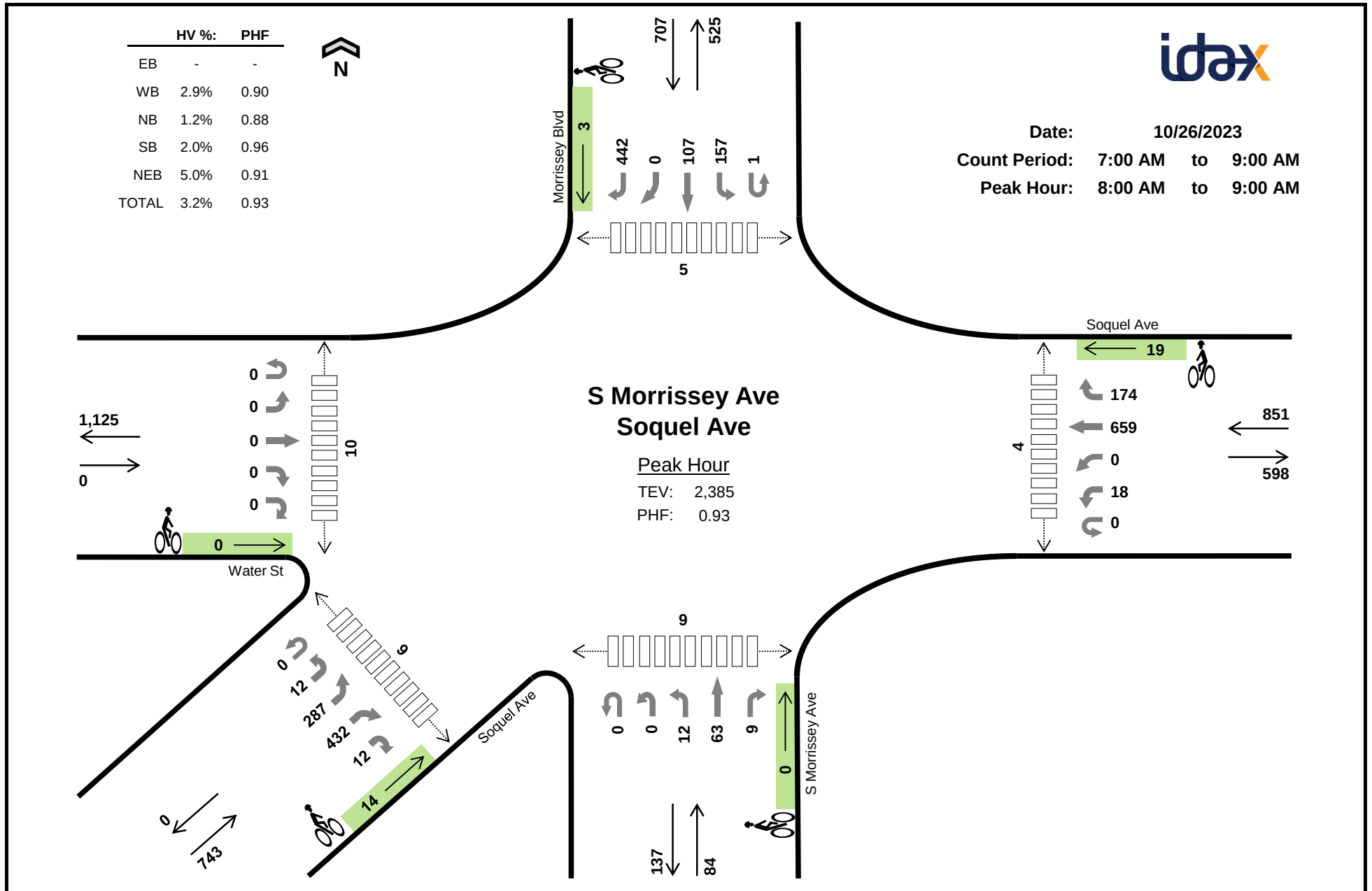
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	2	0	0	4	1	0	1	1	3	5	5	4	6	20
4:15 PM	2	1	1	1	5	2	0	1	0	3	6	5	6	6	23
4:30 PM	5	3	1	0	9	4	0	1	0	5	11	4	20	8	43
4:45 PM	0	1	0	0	1	4	1	2	2	9	6	6	7	9	28
5:00 PM	3	0	1	0	4	5	3	4	3	15	6	7	4	18	35
5:15 PM	0	2	0	0	2	6	0	1	2	9	4	7	2	10	23
5:30 PM	1	3	1	0	5	6	2	2	1	11	2	5	7	12	26
5:45 PM	0	2	0	0	2	3	2	1	0	6	8	5	7	9	29
Count Total	13	14	4	1	32	31	8	13	9	61	48	44	57	78	227
Peak Hour	9	7	2	1	19	11	1	5	3	20	28	20	37	29	114

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Seabright Ave				Seabright Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0
4:15 PM	0	0	2	0	0	0	1	0	0	1	0	0	0	0	1	0	5	0
4:30 PM	0	0	5	0	0	0	3	0	0	1	0	0	0	0	0	0	9	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	19
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	4	19
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	16
5:30 PM	0	0	1	0	0	1	2	0	0	0	0	1	0	0	0	0	5	12
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	13
Count Total	0	0	13	0	0	4	10	0	0	2	0	2	0	0	1	0	32	0
Peak Hour	0	0	9	0	0	2	5	0	0	2	0	0	0	0	1	0	19	0

Two-Hour Count Summaries - Bikes														15-min Total	Rolling One Hour		
Interval Start	Soquel Ave			Soquel Ave			Seabright Ave			Seabright Ave							
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	1	0	0	0	0	1	0	0	1	0	3	0	0		
4:15 PM	0	1	1	0	0	0	0	1	0	0	0	0	3	0	0		
4:30 PM	0	3	1	0	0	0	0	0	1	0	0	0	5	0	0		
4:45 PM	0	3	1	0	1	0	0	1	1	0	0	2	9	20	0		
5:00 PM	0	4	1	0	3	0	0	1	3	0	1	2	15	32	0		
5:15 PM	1	4	1	0	0	0	0	0	1	1	1	0	9	38	0		
5:30 PM	0	6	0	0	2	0	0	1	1	0	1	0	11	44	0		
5:45 PM	0	2	1	1	1	0	1	0	0	0	0	0	6	41	0		
Count Total	1	23	7	1	7	0	1	5	7	1	4	4	61	0	0		
Peak Hour	0	7	4	0	1	0	0	3	2	0	1	2	20	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start	Water St Eastbound					Soquel Ave Westbound					S Morrissey Ave Northbound					Morrissey Blvd Southbound					Soquel Ave Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	0	62	20	0	0	2	12	0	0	15	1	0	46	0	2	22	36	0	218	0
7:15 AM	0	0	0	0	0	0	2	0	67	21	0	0	1	5	0	0	14	7	0	62	0	1	48	43	3	274	0
7:30 AM	0	0	0	0	0	0	2	0	99	20	0	0	0	5	1	0	21	11	0	63	0	0	43	65	3	333	0
7:45 AM	0	0	0	0	0	0	0	0	122	38	0	0	2	15	3	0	34	13	0	76	0	0	82	101	3	489	1,314
8:00 AM	0	0	0	0	0	0	6	0	140	25	0	0	2	20	2	0	44	25	0	115	0	5	59	110	2	555	1,651
8:15 AM	0	0	0	0	0	0	2	0	169	56	0	0	1	13	2	0	43	27	0	111	0	2	68	100	3	597	1,974
8:30 AM	0	0	0	0	0	0	5	0	181	50	0	0	4	18	2	0	35	30	0	113	0	3	96	104	2	643	2,284
8:45 AM	0	0	0	0	0	0	5	0	169	43	0	0	5	12	3	1	35	25	0	103	0	2	64	118	5	590	2,385
Count Total	0	0	0	0	0	0	22	0	1,009	273	0	0	17	100	13	1	241	139	0	689	0	15	482	677	21	3,699	0
Peak Hour	All	0	0	0	0	0	18	0	659	174	0	0	12	63	9	1	157	107	0	442	0	12	287	432	12	2,385	0
	HV	0	0	0	0	0	0	0	21	4	0	0	1	0	0	0	4	2	0	8	0	0	11	26	0	77	0
	HV%	-	-	-	-	-	0%	-	3%	2%	-	-	8%	0%	0%	0%	3%	2%	-	2%	-	0%	4%	6%	0%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

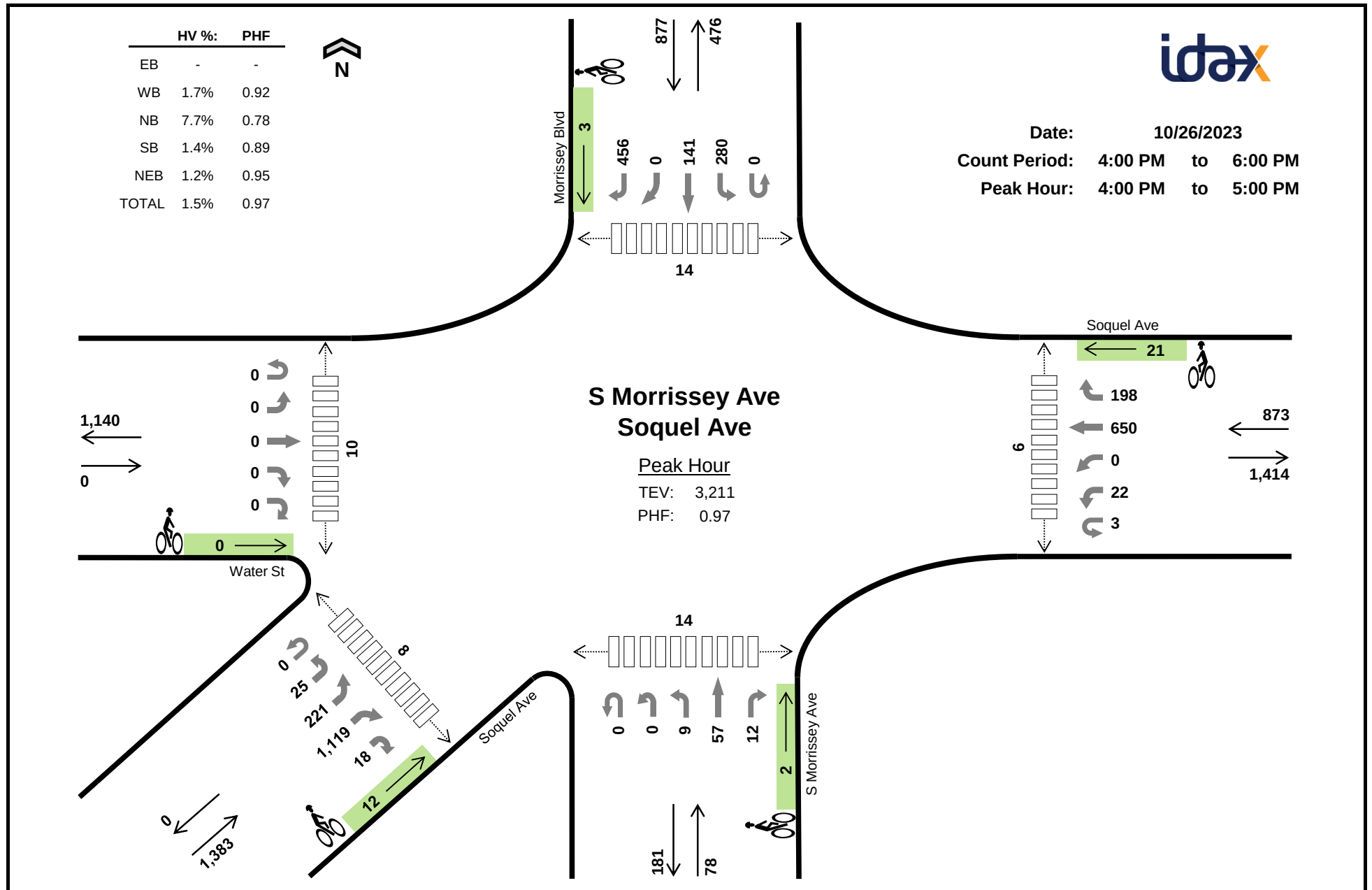
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
7:00 AM	0	1	0	6	1	8	0	2	0	0	0	2	0	0	1	0	0	1
7:15 AM	0	6	0	3	2	11	0	5	0	1	1	7	0	0	1	4	0	5
7:30 AM	0	7	0	1	4	12	0	7	0	1	3	11	0	1	2	3	1	7
7:45 AM	0	0	0	2	6	8	0	3	3	0	2	8	3	2	0	3	2	10
8:00 AM	0	3	0	4	7	14	0	4	0	2	7	13	3	3	0	3	3	12
8:15 AM	0	9	0	3	9	21	0	5	0	0	4	9	0	2	1	1	2	6
8:30 AM	0	6	0	2	6	14	0	4	0	1	1	6	1	2	2	1	2	8
8:45 AM	0	7	1	5	15	28	0	6	0	0	2	8	0	3	2	4	2	11
Count Total	0	39	1	26	50	116	0	36	3	5	20	64	7	13	9	19	12	60
Peak Hr	0	25	1	14	37	77	0	19	0	3	14	36	4	10	5	9	9	37

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Water St Eastbound					Soquel Ave Westbound					S Morrissey Ave Northbound					Morrissey Blvd Southbound					Soquel Ave Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	2	0	0	0	1	0	8	0
7:15 AM	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	1	0	2	0	0	1	1	0	11	0
7:30 AM	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	0	12	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	6	0	8	39
8:00 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	3	0	0	2	5	0	14	45
8:15 AM	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0	0	1	0	0	2	0	0	3	6	0	21	55
8:30 AM	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	1	0	0	1	0	0	2	4	0	14	57
8:45 AM	0	0	0	0	0	0	0	0	6	1	0	0	1	0	0	0	1	2	0	2	0	0	4	11	0	28	77
Count Total	0	0	0	0	0	0	0	0	34	5	0	0	1	0	0	0	9	3	0	14	0	0	14	36	0	116	0
Peak Hour	0	0	0	0	0	0	0	0	21	4	0	0	1	0	0	0	4	2	0	8	0	0	11	26	0	77	0

Two-Hour Count Summaries - Bikes

Interval Start	Water St Eastbound					Soquel Ave Westbound					S Morrissey Ave Northbound					Morrissey Blvd Southbound					Soquel Ave Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	7	0
7:30 AM	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	11	0
7:45 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	8	28
8:00 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	1	0	0	0	7	0	13	39
8:15 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	9	41
8:30 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	6	36
8:45 AM	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	8	36
Count Total	0	0	0	0	0	0	0	0	36	0	0	0	0	3	0	0	2	0	0	3	0	0	0	20	0	64	0
Peak Hour	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	1	0	0	2	0	0	0	14	0	36	0



Two-Hour Count Summaries

Interval Start		Water St					Soquel Ave					S Morrissey Ave					Morrissey Blvd					Soquel Ave					15-min Total	Rolling One Hour
		Eastbound					Westbound					Northbound					Southbound					Northeastbound						
		UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
	4:00 PM	0	0	0	0	0	0	3	0	157	59	0	0	4	14	0	0	63	29	0	118	0	5	55	299	4	810	0
	4:15 PM	0	0	0	0	0	1	5	0	162	44	0	0	3	19	1	0	74	46	0	127	0	7	52	284	2	827	0
	4:30 PM	0	0	0	0	0	2	6	0	153	43	0	0	1	17	7	0	65	28	0	112	0	5	53	275	7	774	0
	4:45 PM	0	0	0	0	0	0	8	0	178	52	0	0	1	7	4	0	78	38	0	99	0	8	61	261	5	800	3,211
	5:00 PM	0	0	0	0	0	2	5	0	160	51	0	0	1	20	0	1	70	40	0	110	0	6	48	283	9	806	3,207
	5:15 PM	0	0	0	0	0	1	4	0	158	49	0	0	4	13	3	0	76	32	0	112	0	9	64	277	7	809	3,189
	5:30 PM	0	0	0	0	0	2	10	0	148	33	0	0	2	9	3	0	77	30	0	123	0	5	49	249	3	743	3,158
	5:45 PM	0	0	0	0	0	0	5	0	146	28	0	0	0	7	2	0	64	22	0	124	0	6	41	226	4	675	3,033
Count Total		0	0	0	0	0	8	46	0	1,262	359	0	0	16	106	20	1	567	265	0	925	0	51	423	2,154	41	6,244	0
Peak Hour	All	0	0	0	0	0	3	22	0	650	198	0	0	9	57	12	0	280	141	0	456	0	25	221	1,119	18	3,211	0
	HV	0	0	0	0	0	0	0	0	13	2	0	0	0	3	3	0	2	3	0	7	0	0	2	14	0	49	0
	HV%	-	-	-	-	-	0%	0%	-	2%	1%	-	-	0%	5%	25%	-	1%	2%	-	2%	-	0%	1%	1%	0%	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

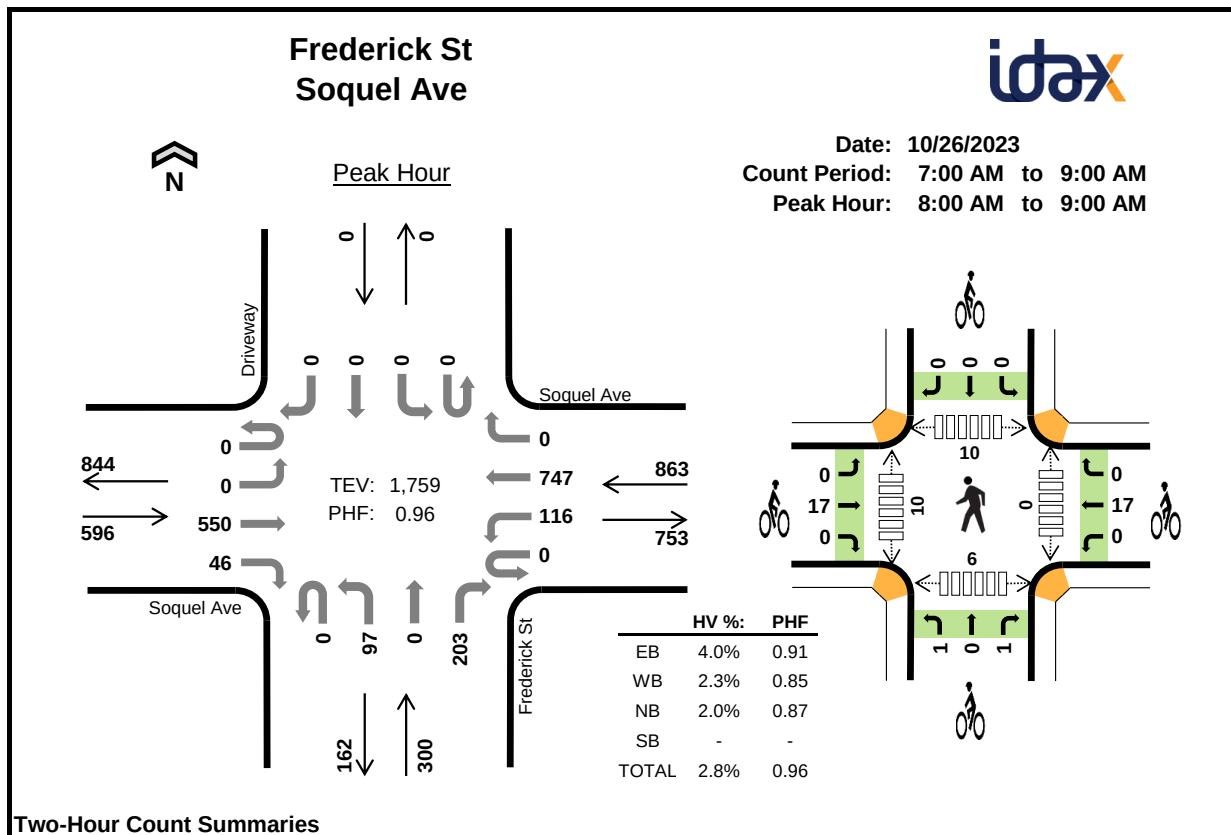
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
4:00 PM	0	2	1	5	1	9	0	7	0	1	2	10	0	3	2	0	2	7
4:15 PM	0	5	0	2	3	10	0	2	0	0	3	5	2	5	3	5	4	19
4:30 PM	0	3	2	2	9	16	0	8	1	1	5	15	3	1	5	2	1	12
4:45 PM	0	5	3	3	3	14	0	4	1	1	2	8	1	1	4	7	1	14
5:00 PM	0	2	0	1	7	10	0	7	0	0	4	11	2	5	10	6	5	28
5:15 PM	0	3	0	1	3	7	0	3	0	0	9	12	1	4	1	3	4	13
5:30 PM	0	2	0	2	4	8	0	7	1	1	7	16	3	2	8	8	1	22
5:45 PM	0	1	0	0	2	3	0	3	1	1	9	14	1	1	7	5	1	15
Count Total	0	23	6	16	32	77	0	41	4	5	41	91	13	22	40	36	19	130
Peak Hr	0	15	6	12	16	49	0	21	2	3	12	38	6	10	14	14	8	52

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Water St Eastbound					Soquel Ave Westbound					S Morrissey Ave Northbound					Morrissey Blvd Southbound					Soquel Ave Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	2	0	3	0	0	0	1	0	9	0
4:15 PM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	1	2	0	10	0
4:30 PM	0	0	0	0	0	0	0	0	2	1	0	0	0	2	0	0	1	0	0	1	0	0	0	9	0	16	0
4:45 PM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	3	0	1	1	0	1	0	0	1	2	0	14	49
5:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	7	0	10	50
5:15 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	7	47
5:30 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3	0	8	39
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	28
Count Total	0	0	0	0	0	0	0	0	20	3	0	0	0	3	3	0	3	4	0	9	0	0	4	27	1	77	0
Peak Hour	0	0	0	0	0	0	0	0	13	2	0	0	0	3	3	0	2	3	0	7	0	0	2	14	0	49	0

Two-Hour Count Summaries - Bikes

Interval Start	Water St Eastbound					Soquel Ave Westbound					S Morrissey Ave Northbound					Morrissey Blvd Southbound					Soquel Ave Northeastbound					15-min Total	Rolling One Hour	
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR			
4:00 PM	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	10	0
4:15 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	5	0
4:30 PM	0	0	0	0	0	0	0	0	8	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	5	0	15	0
4:45 PM	0	0	0	0	0	0	0	0	3	1	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	8	38	
5:00 PM	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	11	39	
5:15 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	0	12	46	
5:30 PM	0	0	0	0	0	0	0	0	6	1	0	0	0	1	0	0	0	0	0	1	0	0	0	7	0	16	47	
5:45 PM	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	1	0	0	1	8	0	14	53	
Count Total	0	0	0	0	0	0	0	0	38	3	0	0	1	3	0	0	0	1	0	4	0	0	4	37	0	91	0	
Peak Hour	0	0	0	0	0	0	0	0	20	1	0	0	1	1	0	0	0	1	0	2	0	0	1	11	0	38	0	

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Frederick St				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	45	4	0	7	66	0	0	15	0	19	0	0	0	0	156	0
7:15 AM		0	0	49	5	0	9	85	0	0	9	0	18	0	0	0	0	175	0
7:30 AM		0	0	78	9	0	12	114	0	0	10	0	20	0	0	0	0	243	0
7:45 AM		0	0	114	10	0	24	125	0	0	28	0	40	0	0	0	0	341	915
8:00 AM		0	0	156	8	0	28	169	0	0	19	0	54	0	0	0	0	434	1,193
8:15 AM		0	0	134	11	0	28	173	0	0	35	0	51	0	0	0	0	432	1,450
8:30 AM		0	0	123	13	0	30	224	0	0	20	0	49	0	0	0	0	459	1,666
8:45 AM		0	0	137	14	0	30	181	0	0	23	0	49	0	0	0	0	434	1,759
Count Total		0	0	836	74	0	168	1,137	0	0	159	0	300	0	0	0	0	2,674	0
Peak Hour	All	0	0	550	46	0	116	747	0	0	97	0	203	0	0	0	0	1,759	0
	HV	0	0	23	1	0	1	19	0	0	1	0	5	0	0	0	0	50	0
	HV%	-	-	4%	2%	-	1%	3%	-	-	1%	-	2%	-	-	-	-	3%	0

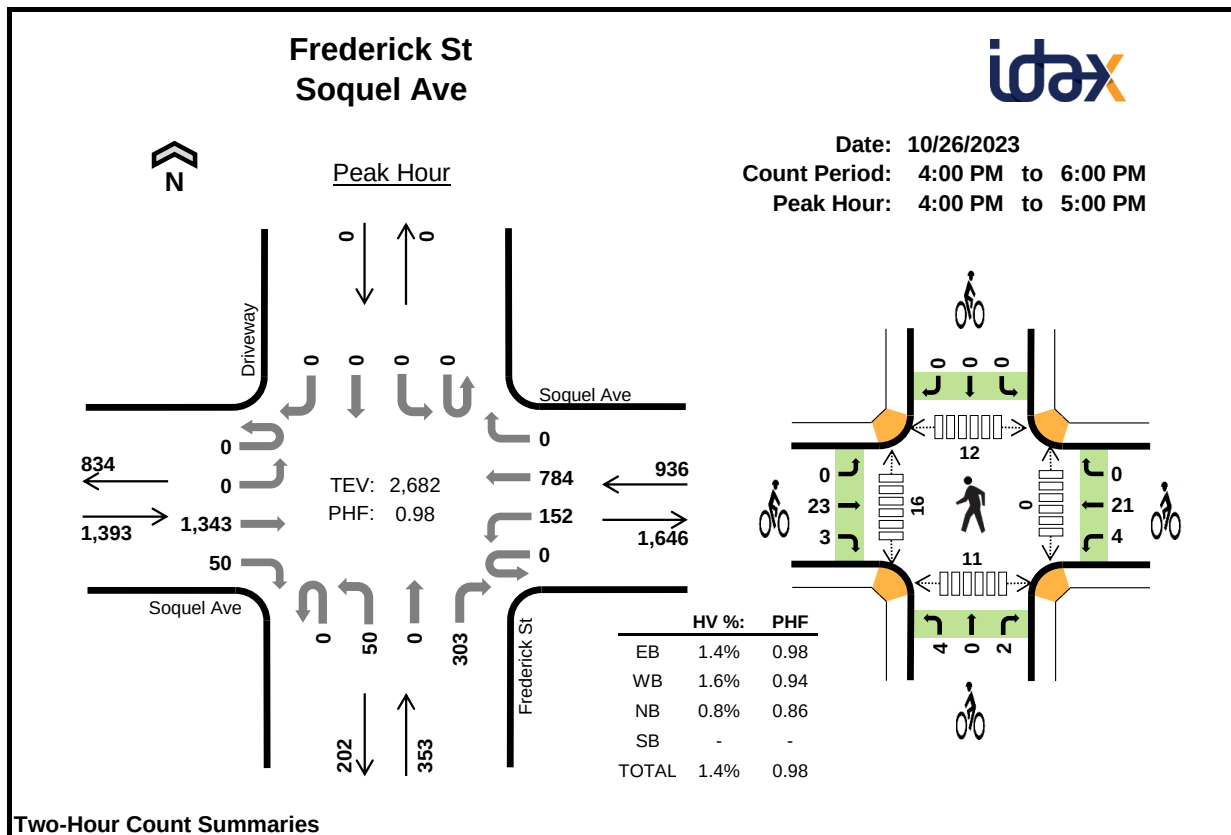
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	3	0	0	7	0	4	3	0	7	0	1	2	0	3
7:15 AM	3	9	0	0	12	0	3	0	0	3	0	2	1	3	6
7:30 AM	3	5	3	0	11	4	7	1	0	12	0	3	2	2	7
7:45 AM	8	0	2	0	10	2	6	1	0	9	0	3	4	1	8
8:00 AM	4	4	0	0	8	8	4	0	0	12	0	3	2	2	7
8:15 AM	7	4	3	0	14	4	4	2	0	10	0	3	3	2	8
8:30 AM	5	6	1	0	12	1	3	0	0	4	0	2	4	1	7
8:45 AM	8	6	2	0	16	4	6	0	0	10	0	2	1	1	4
Count Total	42	37	11	0	90	23	37	7	0	67	0	19	19	12	50
Peak Hour	24	20	6	0	50	17	17	2	0	36	0	10	10	6	26

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Frederick St				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	4	0	0	1	2	0	0	0	0	0	0	0	0	0	7	0
7:15 AM	0	0	3	0	0	1	8	0	0	0	0	0	0	0	0	0	12	0
7:30 AM	0	0	3	0	0	0	5	0	0	1	0	2	0	0	0	0	11	0
7:45 AM	0	0	8	0	0	0	0	0	0	0	0	2	0	0	0	0	10	40
8:00 AM	0	0	3	1	0	0	4	0	0	0	0	0	0	0	0	0	8	41
8:15 AM	0	0	7	0	0	1	3	0	0	1	0	2	0	0	0	0	14	43
8:30 AM	0	0	5	0	0	0	6	0	0	0	0	1	0	0	0	0	12	44
8:45 AM	0	0	8	0	0	0	6	0	0	0	0	2	0	0	0	0	16	50
Count Total	0	0	41	1	0	3	34	0	0	2	0	9	0	0	0	0	90	0
Peak Hour	0	0	23	1	0	1	19	0	0	1	0	5	0	0	0	0	50	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Frederick St			Driveway			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	1	3	0	2	0	1	0	0	0	7	0				
7:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	3	0				
7:30 AM	0	4	0	0	7	0	1	0	0	0	0	0	12	0				
7:45 AM	0	2	0	1	5	0	0	0	1	0	0	0	9	31				
8:00 AM	0	8	0	0	4	0	0	0	0	0	0	0	12	36				
8:15 AM	0	4	0	0	4	0	1	0	1	0	0	0	10	43				
8:30 AM	0	1	0	0	3	0	0	0	0	0	0	0	4	35				
8:45 AM	0	4	0	0	6	0	0	0	0	0	0	0	10	36				
Count Total	0	23	0	2	35	0	4	0	3	0	0	0	67	0				
Peak Hour	0	17	0	0	17	0	1	0	1	0	0	0	36	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Frederick St				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	4:00 PM	0	0	336	10	0	39	192	0	0	10	0	72	0	0	0	0	659	0
	4:15 PM	0	0	346	9	0	37	180	0	0	13	0	90	0	0	0	0	675	0
	4:30 PM	0	0	321	19	0	33	205	0	0	9	0	78	0	0	0	0	665	0
	4:45 PM	0	0	340	12	0	43	207	0	0	18	0	63	0	0	0	0	683	2,682
	5:00 PM	0	0	330	13	0	24	174	0	0	17	0	80	0	0	0	0	638	2,661
	5:15 PM	0	0	356	18	0	29	176	0	0	15	0	54	0	0	0	0	648	2,634
	5:30 PM	0	0	331	12	0	38	173	0	0	13	0	58	0	0	0	0	625	2,594
	5:45 PM	0	0	283	15	0	19	163	0	1	14	0	63	0	0	0	0	558	2,469
Count Total		0	0	2,643	108	0	262	1,470	0	1	109	0	558	0	0	0	0	5,151	0
Peak Hour	All	0	0	1,343	50	0	152	784	0	0	50	0	303	0	0	0	0	2,682	0
	HV	0	0	19	1	0	0	15	0	0	0	0	3	0	0	0	0	38	0
	HV%	-	-	1%	2%	-	0%	2%	-	-	0%	-	1%	-	-	-	-	1%	0

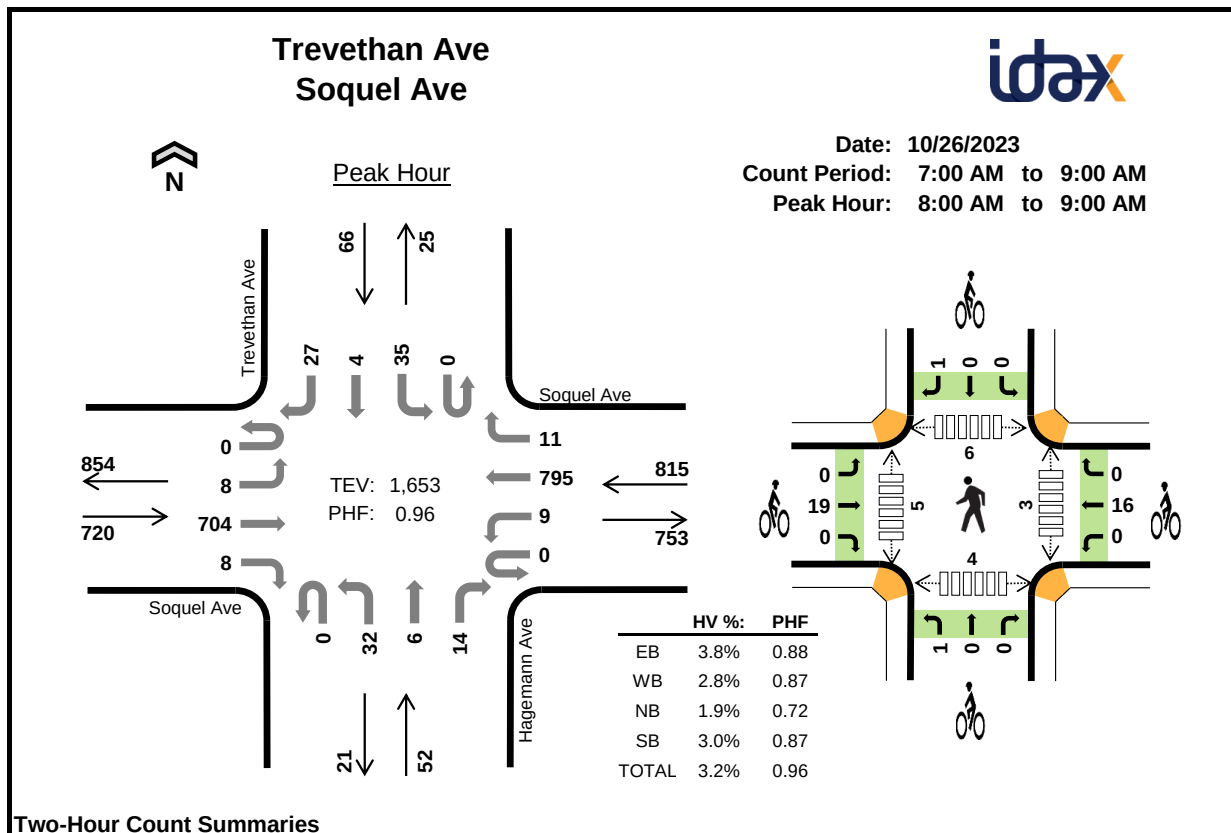
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	2	0	0	3	5	10	2	0	17	0	3	2	6	11
4:15 PM	4	6	3	0	13	6	6	1	0	13	0	2	2	2	6
4:30 PM	12	3	0	0	15	10	6	2	0	18	0	6	8	0	14
4:45 PM	3	4	0	0	7	5	3	1	0	9	0	5	0	3	8
5:00 PM	8	0	0	0	8	4	7	1	0	12	0	5	0	1	6
5:15 PM	1	2	0	0	3	6	4	0	0	10	0	2	4	3	9
5:30 PM	4	4	1	0	9	8	6	3	0	17	0	9	5	1	15
5:45 PM	2	2	0	0	4	7	1	0	0	8	0	0	2	1	3
Count Total	35	23	4	0	62	51	43	10	0	104	0	32	23	17	72
Peak Hour	20	15	3	0	38	26	25	6	0	57	0	16	12	11	39

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Frederick St				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	4	0	0	0	6	0	0	0	0	3	0	0	0	0	13	0
4:30 PM	0	0	11	1	0	0	3	0	0	0	0	0	0	0	0	0	15	0
4:45 PM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	7	38
5:00 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8	43
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	33
5:30 PM	0	0	4	0	0	1	3	0	0	0	0	1	0	0	0	0	9	27
5:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	24
Count Total	0	0	34	1	0	1	22	0	0	0	0	4	0	0	0	0	62	0
Peak Hour	0	0	19	1	0	0	15	0	0	0	0	3	0	0	0	0	38	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Soquel Ave			Soquel Ave			Frederick St			Driveway			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	5	0	3	7	0	1	0	1	0	0	0	17	0			
4:15 PM	0	6	0	0	6	0	0	0	1	0	0	0	13	0			
4:30 PM	0	8	2	1	5	0	2	0	0	0	0	0	18	0			
4:45 PM	0	4	1	0	3	0	1	0	0	0	0	0	9	57			
5:00 PM	0	4	0	1	6	0	1	0	0	0	0	0	12	52			
5:15 PM	0	6	0	0	4	0	0	0	0	0	0	0	10	49			
5:30 PM	0	5	3	1	5	0	2	0	1	0	0	0	17	48			
5:45 PM	0	6	1	0	1	0	0	0	0	0	0	0	8	47			
Count Total	0	44	7	6	37	0	7	0	3	0	0	0	104	0			
Peak Hour	0	23	3	4	21	0	4	0	2	0	0	0	57	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Hagemann Ave				Trevethan Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	69	0	0	0	71	2	0	2	0	1	0	2	0	3	150	0
7:15 AM		0	1	66	1	0	0	91	1	0	3	0	1	0	0	0	2	166	0
7:30 AM		0	1	92	1	0	0	115	2	0	3	0	1	0	1	0	4	220	0
7:45 AM		0	0	146	3	0	2	155	0	0	6	0	1	0	5	0	5	323	859
8:00 AM		0	2	201	1	0	2	173	1	0	10	0	5	0	8	0	2	405	1,114
8:15 AM		0	0	180	1	0	1	204	7	0	8	4	6	0	9	2	8	430	1,378
8:30 AM		0	3	161	3	0	3	228	2	0	10	2	0	0	8	2	8	430	1,588
8:45 AM		0	3	162	3	0	3	190	1	0	4	0	3	0	10	0	9	388	1,653
Count Total		0	10	1,077	13	0	11	1,227	16	0	46	6	18	0	43	4	41	2,512	0
Peak Hour	All	0	8	704	8	0	9	795	11	0	32	6	14	0	35	4	27	1,653	0
	HV	0	0	27	0	0	1	22	0	0	0	0	1	0	1	0	1	53	0
	HV%	-	0%	4%	0%	-	11%	3%	0%	-	0%	0%	7%	-	3%	0%	4%	3%	0

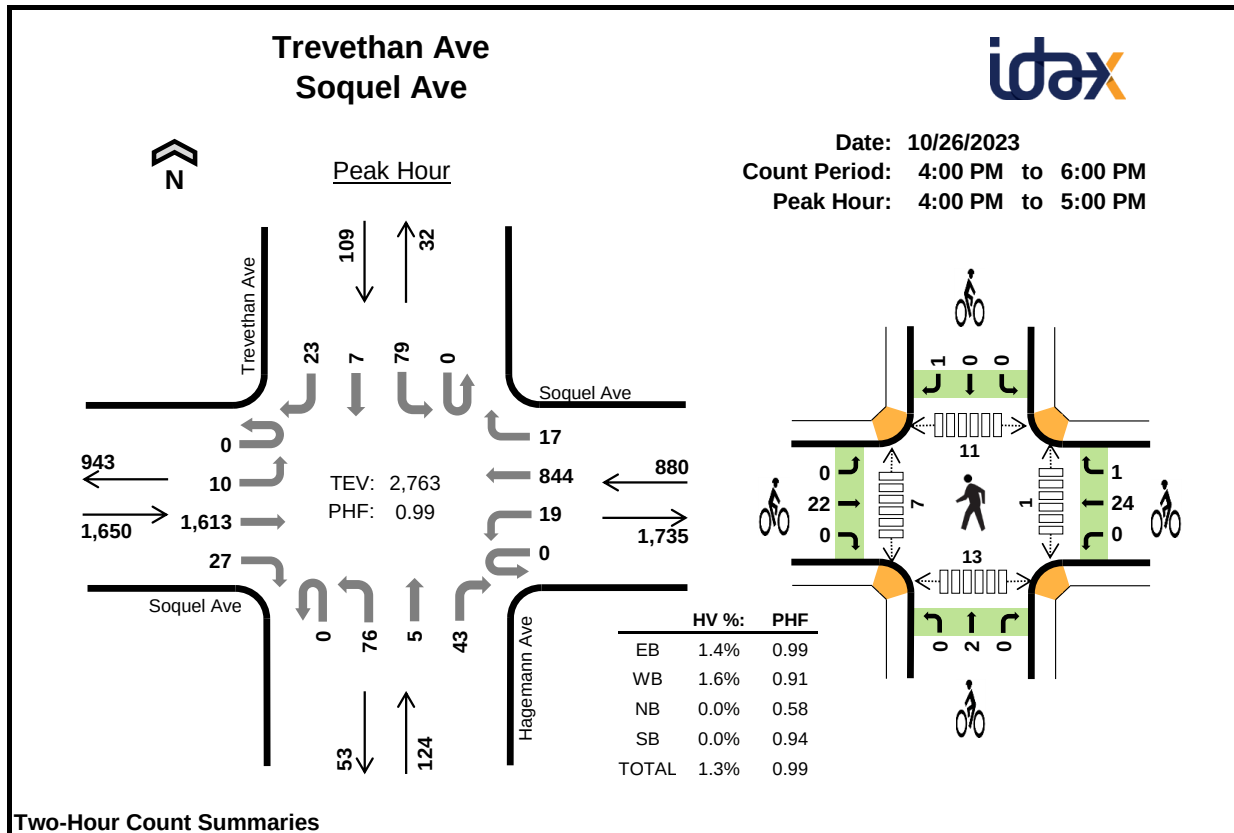
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	3	0	0	6	0	3	0	0	3	1	0	2	0	3
7:15 AM	2	7	0	0	9	1	5	0	0	6	0	0	0	2	2
7:30 AM	3	6	1	0	10	2	7	0	0	9	0	1	3	1	5
7:45 AM	9	0	0	0	9	5	3	0	0	8	0	0	0	3	3
8:00 AM	4	5	1	0	10	7	4	0	0	11	0	1	1	2	4
8:15 AM	10	5	0	0	15	5	2	1	1	9	2	2	1	1	6
8:30 AM	5	9	0	1	15	3	5	0	0	8	1	1	3	0	5
8:45 AM	8	4	0	1	13	4	5	0	0	9	0	1	1	1	3
Count Total	44	39	2	2	87	27	34	1	1	63	4	6	11	10	31
Peak Hour	27	23	1	2	53	19	16	1	1	37	3	5	6	4	18

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Soquel Ave				Soquel Ave				Hagemann Ave				Trevethan Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	0
7:15 AM	0	0	2	0	0	0	7	0	0	0	0	0	0	0	0	0	0	9	0
7:30 AM	0	0	2	1	0	0	6	0	0	1	0	0	0	0	0	0	0	10	0
7:45 AM	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	34
8:00 AM	0	0	4	0	0	1	4	0	0	0	0	1	0	0	0	0	0	10	38
8:15 AM	0	0	10	0	0	0	5	0	0	0	0	0	0	0	0	0	0	15	44
8:30 AM	0	0	5	0	0	0	9	0	0	0	0	0	0	0	1	0	0	15	49
8:45 AM	0	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0	1	13	53
Count Total	0	0	43	1	0	1	38	0	0	1	0	1	0	1	0	1	1	87	0
Peak Hour	0	0	27	0	0	1	22	0	0	0	0	1	0	1	0	1	1	53	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Hagemann Ave			Trevethan Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	3	0				
7:15 AM	0	1	0	0	5	0	0	0	0	0	0	0	6	0				
7:30 AM	0	2	0	0	7	0	0	0	0	0	0	0	9	0				
7:45 AM	0	5	0	0	3	0	0	0	0	0	0	0	8	26				
8:00 AM	0	7	0	0	4	0	0	0	0	0	0	0	11	34				
8:15 AM	0	5	0	0	2	0	1	0	0	0	0	1	9	37				
8:30 AM	0	3	0	0	5	0	0	0	0	0	0	0	8	36				
8:45 AM	0	4	0	0	5	0	0	0	0	0	0	0	9	37				
Count Total	0	27	0	0	34	0	1	0	0	0	0	1	63	0				
Peak Hour	0	19	0	0	16	0	1	0	0	0	0	1	37	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Hagemann Ave				Trevethan Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	409	6	0	3	212	1	0	13	2	9	0	23	2	4	686	0
4:15 PM		0	4	398	4	0	4	184	5	0	32	1	20	0	17	2	10	681	0
4:30 PM		0	1	408	6	0	6	232	3	0	12	1	8	0	16	2	5	700	0
4:45 PM		0	3	398	11	0	6	216	8	0	19	1	6	0	23	1	4	696	2,763
5:00 PM		0	5	410	1	0	6	183	6	0	11	1	11	0	20	3	6	663	2,740
5:15 PM		0	0	394	6	0	3	180	1	0	7	0	5	0	22	2	4	624	2,683
5:30 PM		0	5	355	6	0	3	185	2	0	11	2	5	0	27	0	10	611	2,594
5:45 PM		0	6	340	7	0	5	171	4	0	11	0	3	0	10	3	6	566	2,464
Count Total		0	26	3,112	47	0	36	1,563	30	0	116	8	67	0	158	15	49	5,227	0
Peak Hour	All	0	10	1,613	27	0	19	844	17	0	76	5	43	0	79	7	23	2,763	0
	HV	0	0	23	0	0	0	14	0	0	0	0	0	0	0	0	0	37	0
	HV%	-	0%	1%	0%	-	0%	2%	0%	-	0%	0%	0%	-	0%	0%	0%	1%	0

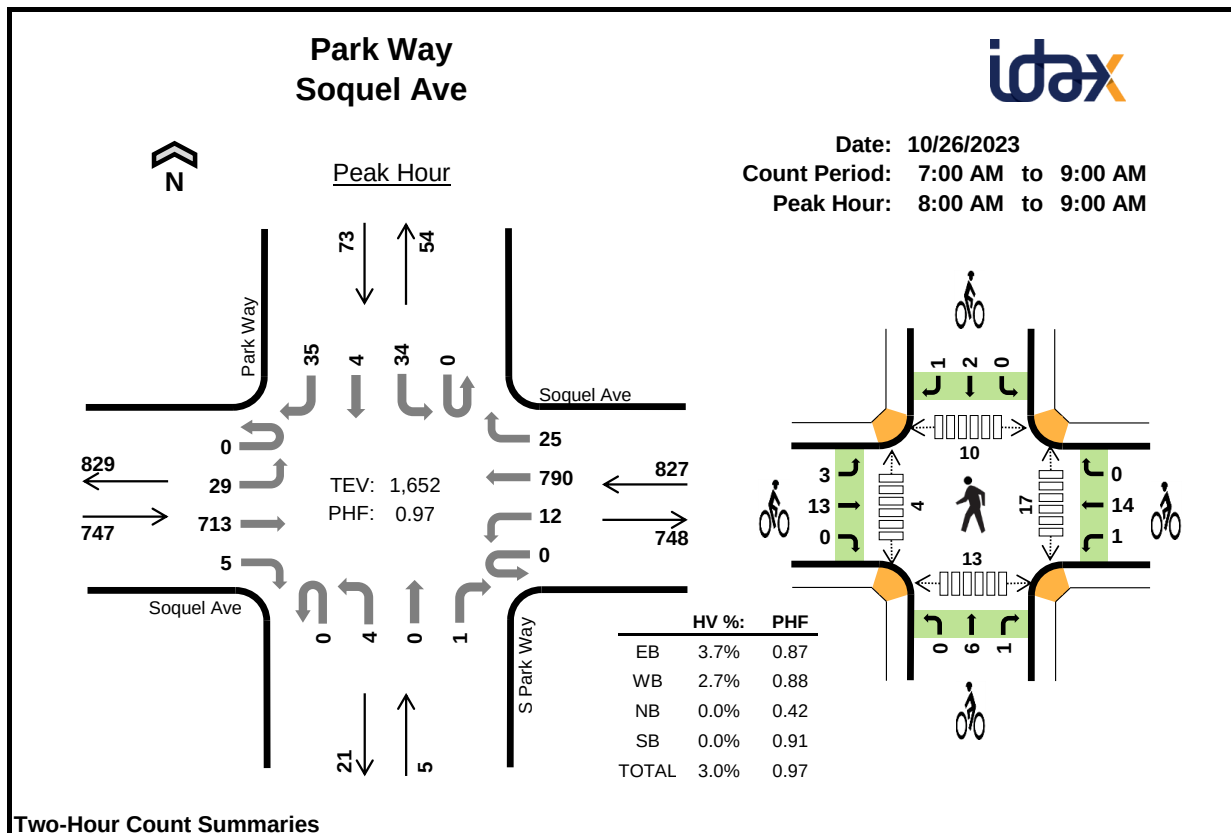
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	0	0	5	5	8	0	1	14	0	0	1	1	2
4:15 PM	6	4	0	0	10	6	5	2	0	13	0	2	2	5	9
4:30 PM	11	4	0	0	15	10	8	0	0	18	1	2	7	5	15
4:45 PM	3	4	0	0	7	1	4	0	0	5	0	3	1	2	6
5:00 PM	6	0	0	0	6	5	5	0	0	10	0	5	3	1	9
5:15 PM	1	4	0	0	5	6	3	0	0	9	1	0	4	2	7
5:30 PM	4	4	0	0	8	7	3	2	0	12	0	0	4	1	5
5:45 PM	2	0	0	0	2	3	1	2	0	6	2	2	1	2	7
Count Total	36	22	0	0	58	43	37	6	1	87	4	14	23	19	60
Peak Hour	23	14	0	0	37	22	25	2	1	50	1	7	11	13	32

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Soquel Ave				Soquel Ave				Hagemann Ave				Trevethan Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0
4:15 PM	0	0	6	0	0	0	4	0	0	0	0	0	0	0	0	0	0	10	0
4:30 PM	0	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	15	0
4:45 PM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	37
5:00 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	38
5:15 PM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	33
5:30 PM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	26
5:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	21
Count Total	0	0	36	0	0	0	22	0	0	0	0	0	0	0	0	0	0	58	0
Peak Hour	0	0	23	0	0	0	14	0	0	0	0	0	0	0	0	0	0	37	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Soquel Ave			Soquel Ave			Hagemann Ave			Trevethan Ave			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	5	0	0	7	1	0	0	0	0	0	1	14	0			
4:15 PM	0	6	0	0	5	0	0	2	0	0	0	0	13	0			
4:30 PM	0	10	0	0	8	0	0	0	0	0	0	0	18	0			
4:45 PM	0	1	0	0	4	0	0	0	0	0	0	0	5	50			
5:00 PM	0	5	0	0	5	0	0	0	0	0	0	0	10	46			
5:15 PM	0	6	0	0	3	0	0	0	0	0	0	0	9	42			
5:30 PM	0	6	1	0	3	0	1	0	1	0	0	0	12	36			
5:45 PM	0	3	0	0	1	0	1	0	1	0	0	0	6	37			
Count Total	0	42	1	0	36	1	2	2	2	0	0	1	87	0			
Peak Hour	0	22	0	0	24	1	0	2	0	0	0	1	50	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				S Park Way				Park Way				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	5	68	0	0	0	72	3	0	0	0	0	0	6	1	1	156	0
7:15 AM		0	1	67	0	0	0	93	1	0	1	0	3	0	3	0	5	174	0
7:30 AM		0	3	85	0	0	3	119	3	0	0	0	3	1	9	0	3	229	0
7:45 AM		0	7	142	3	0	2	156	11	0	0	0	4	0	6	1	4	336	895
8:00 AM		0	8	207	0	0	4	176	10	0	2	0	1	0	10	1	5	424	1,163
8:15 AM		0	4	191	0	0	2	206	3	0	0	0	0	0	12	1	4	423	1,412
8:30 AM		0	11	156	2	0	1	226	7	0	1	0	0	0	6	1	13	424	1,607
8:45 AM		0	6	159	3	0	5	182	5	0	1	0	0	0	6	1	13	381	1,652
Count Total		0	45	1,075	8	0	17	1,230	43	0	5	0	11	1	58	6	48	2,547	0
Peak Hour	All	0	29	713	5	0	12	790	25	0	4	0	1	0	34	4	35	1,652	0
	HV	0	0	28	0	0	0	22	0	0	0	0	0	0	0	0	0	50	0
	HV%	-	0%	4%	0%	-	0%	3%	0%	-	0%	-	0%	-	0%	0%	0%	3%	0

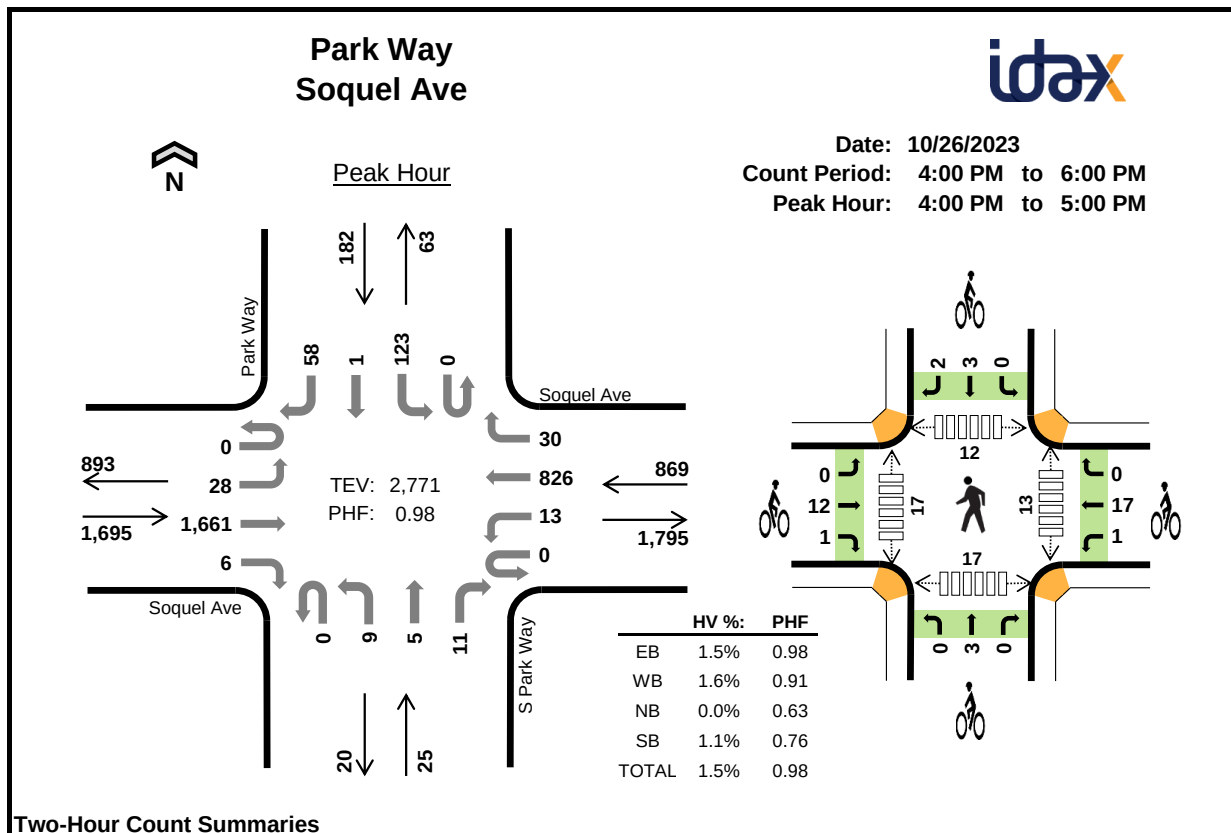
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	3	0	0	7	0	5	0	0	5	2	1	0	0	3
7:15 AM	1	7	0	0	8	1	3	1	1	6	2	0	2	2	6
7:30 AM	2	6	0	0	8	2	4	1	1	8	0	2	4	0	6
7:45 AM	10	0	0	0	10	3	3	1	2	9	7	4	2	2	15
8:00 AM	4	5	0	0	9	5	4	1	0	10	8	1	6	1	16
8:15 AM	9	4	0	0	13	6	3	3	0	12	7	2	1	3	13
8:30 AM	6	10	0	0	16	2	3	1	2	8	1	1	3	7	12
8:45 AM	9	3	0	0	12	3	5	2	1	11	1	0	0	2	3
Count Total	45	38	0	0	83	22	30	10	7	69	28	11	18	17	74
Peak Hour	28	22	0	0	50	16	15	7	3	41	17	4	10	13	44

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				S Park Way				Park Way				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0
7:15 AM	0	0	1	0	0	0	7	0	0	0	0	0	0	0	0	0	8	0
7:30 AM	0	0	2	0	0	0	6	0	0	0	0	0	0	0	0	0	8	0
7:45 AM	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	33
8:00 AM	0	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	9	35
8:15 AM	0	0	9	0	0	0	4	0	0	0	0	0	0	0	0	0	13	40
8:30 AM	0	0	6	0	0	0	10	0	0	0	0	0	0	0	0	0	16	48
8:45 AM	0	0	9	0	0	0	3	0	0	0	0	0	0	0	0	0	12	50
Count Total	0	0	45	0	0	0	38	0	0	0	0	0	0	0	0	0	83	0
Peak Hour	0	0	28	0	0	0	22	0	0	0	0	0	0	0	0	0	50	0

Two-Hour Count Summaries - Bikes																
Interval Start	Soquel Ave			Soquel Ave			S Park Way			Park Way			15-min Total	Rolling One Hour		
	Eastbound			Westbound			Northbound			Southbound						
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT				
7:00 AM	0	0	0	0	5	0	0	0	0	0	0	0	5	0		
7:15 AM	0	1	0	0	3	0	0	1	0	0	1	0	6	0		
7:30 AM	0	2	0	0	4	0	0	0	1	0	1	0	8	0		
7:45 AM	0	3	0	0	3	0	0	0	1	0	0	2	9	28		
8:00 AM	0	5	0	0	4	0	0	1	0	0	0	0	10	33		
8:15 AM	3	3	0	0	3	0	0	2	1	0	0	0	12	39		
8:30 AM	0	2	0	0	3	0	0	1	0	0	2	0	8	39		
8:45 AM	0	3	0	1	4	0	0	2	0	0	0	1	11	41		
Count Total	3	19	0	1	29	0	0	7	3	0	4	3	69	0		
Peak Hour	3	13	0	1	14	0	0	6	1	0	2	1	41	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				S Park Way				Park Way				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	4:00 PM	0	6	425	1	0	3	193	13	0	4	1	1	0	35	0	25	707	0
	4:15 PM	0	5	419	3	0	1	197	6	0	0	1	2	0	28	0	11	673	0
	4:30 PM	0	4	409	2	0	3	210	4	0	2	1	3	0	32	0	13	683	0
	4:45 PM	0	13	408	0	0	6	226	7	0	3	2	5	0	28	1	9	708	2,771
	5:00 PM	0	5	427	1	0	3	171	4	0	3	1	7	0	17	1	11	651	2,715
	5:15 PM	0	5	420	0	0	0	170	5	0	2	1	2	0	24	0	5	634	2,676
	5:30 PM	0	5	383	1	0	0	192	7	0	2	1	2	0	18	0	6	617	2,610
	5:45 PM	0	6	352	0	0	2	179	3	0	2	0	2	0	14	0	7	567	2,469
Count Total		0	49	3,243	8	0	18	1,538	49	0	18	8	24	0	196	2	87	5,240	0
Peak Hour	All	0	28	1,661	6	0	13	826	30	0	9	5	11	0	123	1	58	2,771	0
	HV	0	0	26	0	0	0	13	1	0	0	0	0	0	0	0	2	42	0
	HV%	-	0%	2%	0%	-	0%	2%	3%	-	0%	0%	0%	-	0%	0%	3%	2%	0

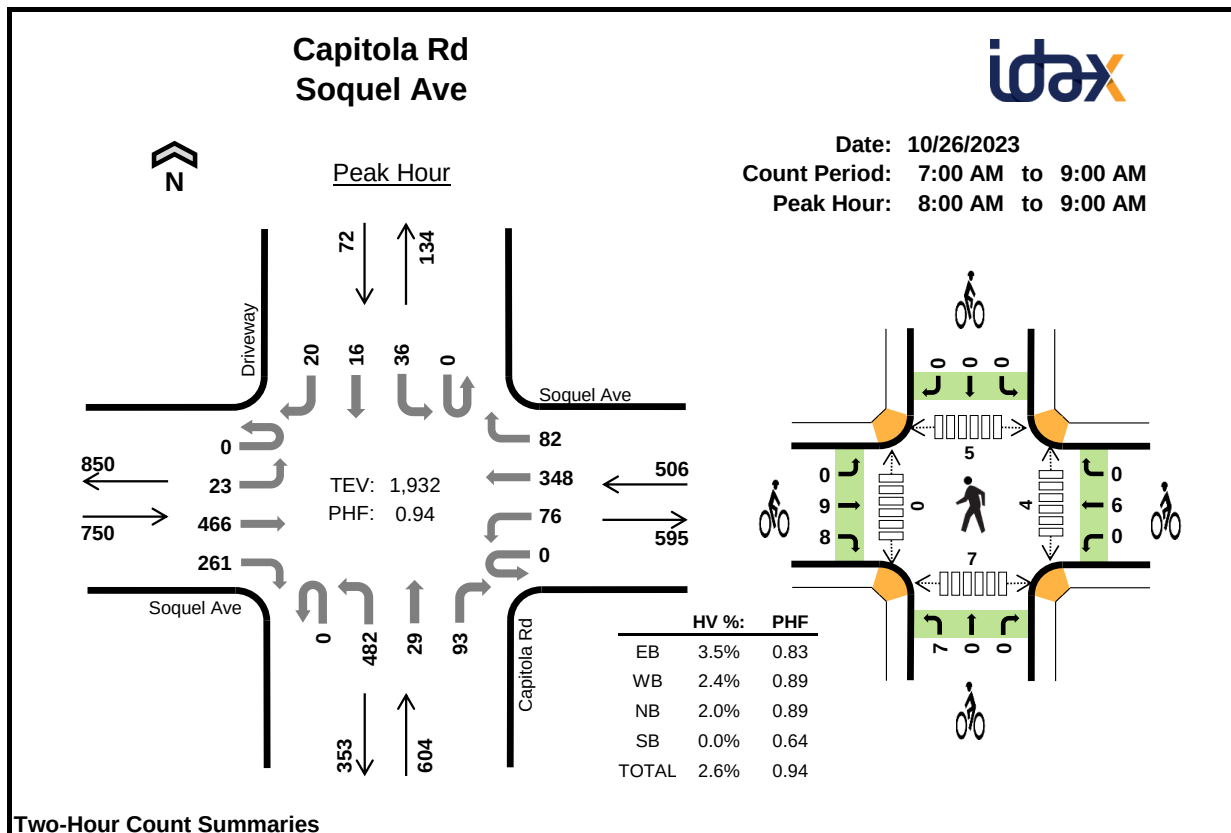
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	1	0	1	7	4	3	0	0	7	1	4	2	2	9
4:15 PM	7	5	0	0	12	4	6	2	3	15	4	4	3	3	14
4:30 PM	12	4	0	1	17	3	4	0	2	9	3	6	4	9	22
4:45 PM	2	4	0	0	6	2	5	1	0	8	5	3	3	3	14
5:00 PM	8	0	0	0	8	5	2	1	6	14	5	7	2	2	16
5:15 PM	2	4	0	0	6	8	2	1	2	13	1	2	4	2	9
5:30 PM	4	4	0	0	8	8	5	0	0	13	2	7	2	2	13
5:45 PM	1	1	0	0	2	4	3	0	2	9	1	1	0	1	3
Count Total	41	23	0	2	66	38	30	5	15	88	22	34	20	24	100
Peak Hour	26	14	0	2	42	13	18	3	5	39	13	17	12	17	59

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Soquel Ave				Soquel Ave				S Park Way				Park Way				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	1	7	0
4:15 PM	0	0	7	0	0	0	5	0	0	0	0	0	0	0	0	0	0	12	0
4:30 PM	0	0	12	0	0	0	3	1	0	0	0	0	0	0	0	0	1	17	0
4:45 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	42
5:00 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	43
5:15 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	37
5:30 PM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	28
5:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	24
Count Total	0	0	41	0	0	0	22	1	0	0	0	0	0	0	0	0	2	66	0
Peak Hour	0	0	26	0	0	0	13	1	0	0	0	0	0	0	0	0	2	42	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Soquel Ave			Soquel Ave			S Park Way			Park Way			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	4	0	0	3	0	0	0	0	0	0	0	7	0			
4:15 PM	0	3	1	0	6	0	0	2	0	0	2	1	15	0			
4:30 PM	0	3	0	0	4	0	0	0	0	0	1	1	9	0			
4:45 PM	0	2	0	1	4	0	0	1	0	0	0	0	8	39			
5:00 PM	0	5	0	0	2	0	0	0	1	1	3	2	14	46			
5:15 PM	1	7	0	0	2	0	0	1	0	2	0	0	13	44			
5:30 PM	0	8	0	0	5	0	0	0	0	0	0	0	13	48			
5:45 PM	0	4	0	0	3	0	0	0	0	0	2	0	9	49			
Count Total	1	36	1	1	29	0	0	4	1	3	8	4	88	0			
Peak Hour	0	12	1	1	17	0	0	3	0	0	3	2	39	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Capitola Rd				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	7:00 AM	0	4	52	29	0	5	40	4	0	41	7	1	0	6	0	1	190	0
	7:15 AM	0	2	48	28	0	4	44	8	0	48	4	7	0	6	4	1	204	0
	7:30 AM	0	2	59	37	0	4	49	14	0	83	8	9	0	2	3	1	271	0
	7:45 AM	0	4	97	52	0	3	72	15	0	91	3	39	0	5	1	4	386	1,051
	8:00 AM	0	8	136	59	0	17	83	24	0	124	5	41	0	11	2	3	513	1,374
	8:15 AM	0	6	148	71	0	28	86	17	0	106	5	25	0	5	2	5	504	1,674
	8:30 AM	0	1	77	74	0	21	94	27	0	136	13	18	0	6	3	7	477	1,880
	8:45 AM	0	8	105	57	0	10	85	14	0	116	6	9	0	14	9	5	438	1,932
Count Total		0	35	722	407	0	92	553	123	0	745	51	149	0	55	24	27	2,983	0
Peak Hour	All	0	23	466	261	0	76	348	82	0	482	29	93	0	36	16	20	1,932	0
	HV	0	0	18	8	0	0	12	0	0	11	0	1	0	0	0	0	50	0
	HV%	-	0%	4%	3%	-	0%	3%	0%	-	2%	0%	1%	-	0%	0%	0%	3%	0

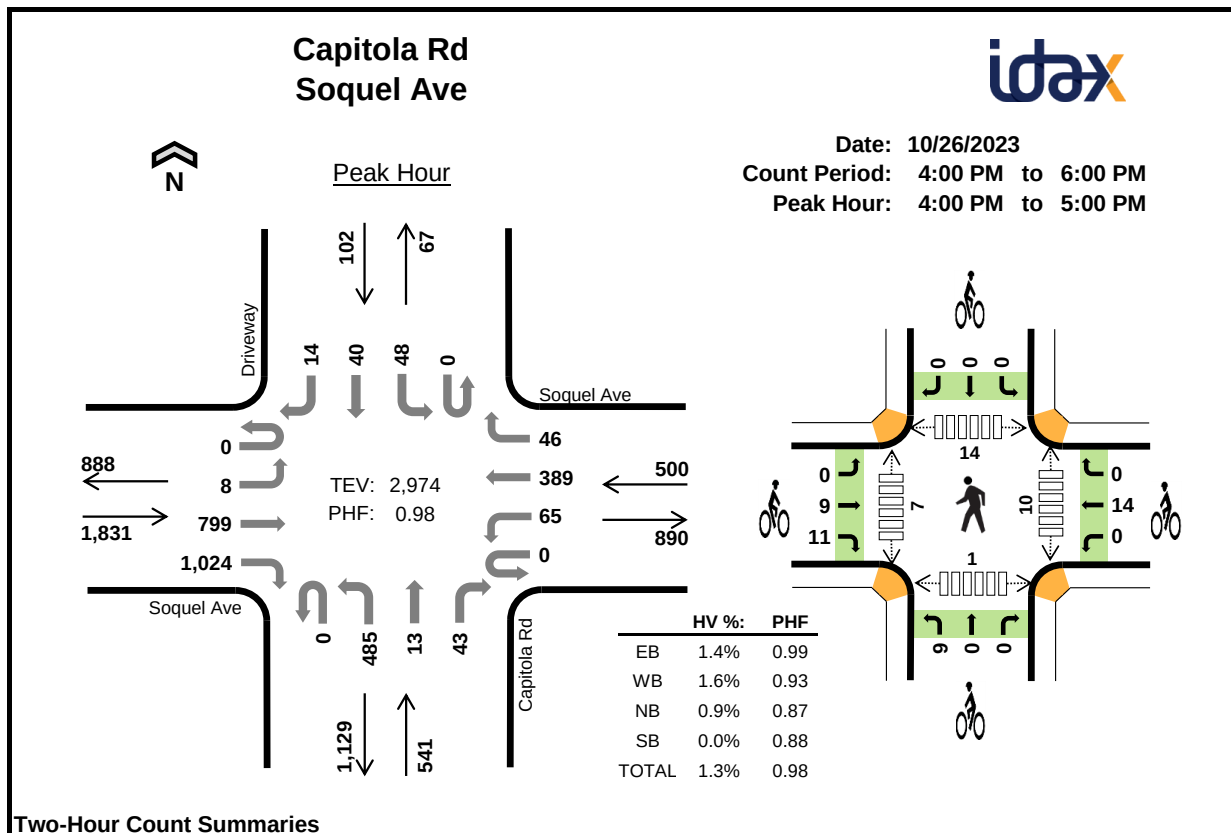
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	1	1	0	7	0	1	0	0	1	0	0	0	0	0
7:15 AM	1	4	4	1	10	1	1	1	0	3	2	0	2	0	4
7:30 AM	2	3	5	0	10	4	3	3	0	10	0	0	3	0	3
7:45 AM	10	0	0	0	10	4	4	2	0	10	1	0	4	0	5
8:00 AM	6	4	2	0	12	4	1	1	0	6	3	0	2	1	6
8:15 AM	6	2	3	0	11	7	0	2	0	9	0	0	2	0	2
8:30 AM	7	4	6	0	17	3	1	3	0	7	1	0	1	5	7
8:45 AM	7	2	1	0	10	3	4	1	0	8	0	0	0	1	1
Count Total	44	20	22	1	87	26	15	13	0	54	7	0	14	7	28
Peak Hour	26	12	12	0	50	17	6	7	0	30	4	0	5	7	16

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Capitola Rd				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	2	0	0	1	0	0	1	0	0	0	0	0	0	7	0
7:15 AM	0	0	1	0	0	1	3	0	0	4	0	0	0	0	0	1	10	0
7:30 AM	0	0	2	0	0	0	2	1	0	4	0	1	0	0	0	0	10	0
7:45 AM	0	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	10	37
8:00 AM	0	0	5	1	0	0	4	0	0	1	0	1	0	0	0	0	12	42
8:15 AM	0	0	6	0	0	0	2	0	0	3	0	0	0	0	0	0	11	43
8:30 AM	0	0	5	2	0	0	4	0	0	6	0	0	0	0	0	0	17	50
8:45 AM	0	0	2	5	0	0	2	0	0	1	0	0	0	0	0	0	10	50
Count Total	0	0	30	14	0	1	18	1	0	20	0	2	0	0	1	0	87	0
Peak Hour	0	0	18	8	0	0	12	0	0	11	0	1	0	0	0	0	50	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Soquel Ave			Soquel Ave			Capitola Rd			Driveway			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
7:15 AM	0	1	0	0	1	0	1	0	0	0	0	0	3	0				
7:30 AM	0	0	4	0	3	0	3	0	0	0	0	0	10	0				
7:45 AM	0	3	1	0	3	1	1	1	0	0	0	0	10	24				
8:00 AM	0	3	1	0	1	0	1	0	0	0	0	0	6	29				
8:15 AM	0	2	5	0	0	0	2	0	0	0	0	0	9	35				
8:30 AM	0	2	1	0	1	0	3	0	0	0	0	0	7	32				
8:45 AM	0	2	1	0	4	0	1	0	0	0	0	0	8	30				
Count Total	0	13	13	0	14	1	12	1	0	0	0	0	54	0				
Peak Hour	0	9	8	0	6	0	7	0	0	0	0	0	30	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		Soquel Ave				Soquel Ave				Capitola Rd				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	201	253	0	21	93	21	0	117	3	14	0	9	9	5	748	0
4:15 PM		0	0	196	262	0	19	100	10	0	98	4	11	0	12	7	5	724	0
4:30 PM		0	3	197	264	0	15	97	3	0	125	4	9	0	16	8	2	743	0
4:45 PM		0	3	205	245	0	10	99	12	0	145	2	9	0	11	16	2	759	2,974
5:00 PM		0	1	211	243	0	9	78	8	0	97	3	14	0	26	4	6	700	2,926
5:15 PM		0	1	196	261	0	20	75	6	0	101	0	20	0	7	4	7	698	2,900
5:30 PM		0	2	164	245	0	19	82	6	0	119	1	17	0	3	6	4	668	2,825
5:45 PM		0	4	151	209	0	12	71	4	0	111	2	9	0	7	3	3	586	2,652
Count Total		0	16	1,521	1,982	0	125	695	70	0	913	19	103	0	91	57	34	5,626	0
Peak Hour	All	0	8	799	1,024	0	65	389	46	0	485	13	43	0	48	40	14	2,974	0
	HV	0	0	13	12	0	1	7	0	0	5	0	0	0	0	0	0	38	0
	HV%	-	0%	2%	1%	-	2%	2%	0%	-	1%	0%	0%	-	0%	0%	0%	1%	0

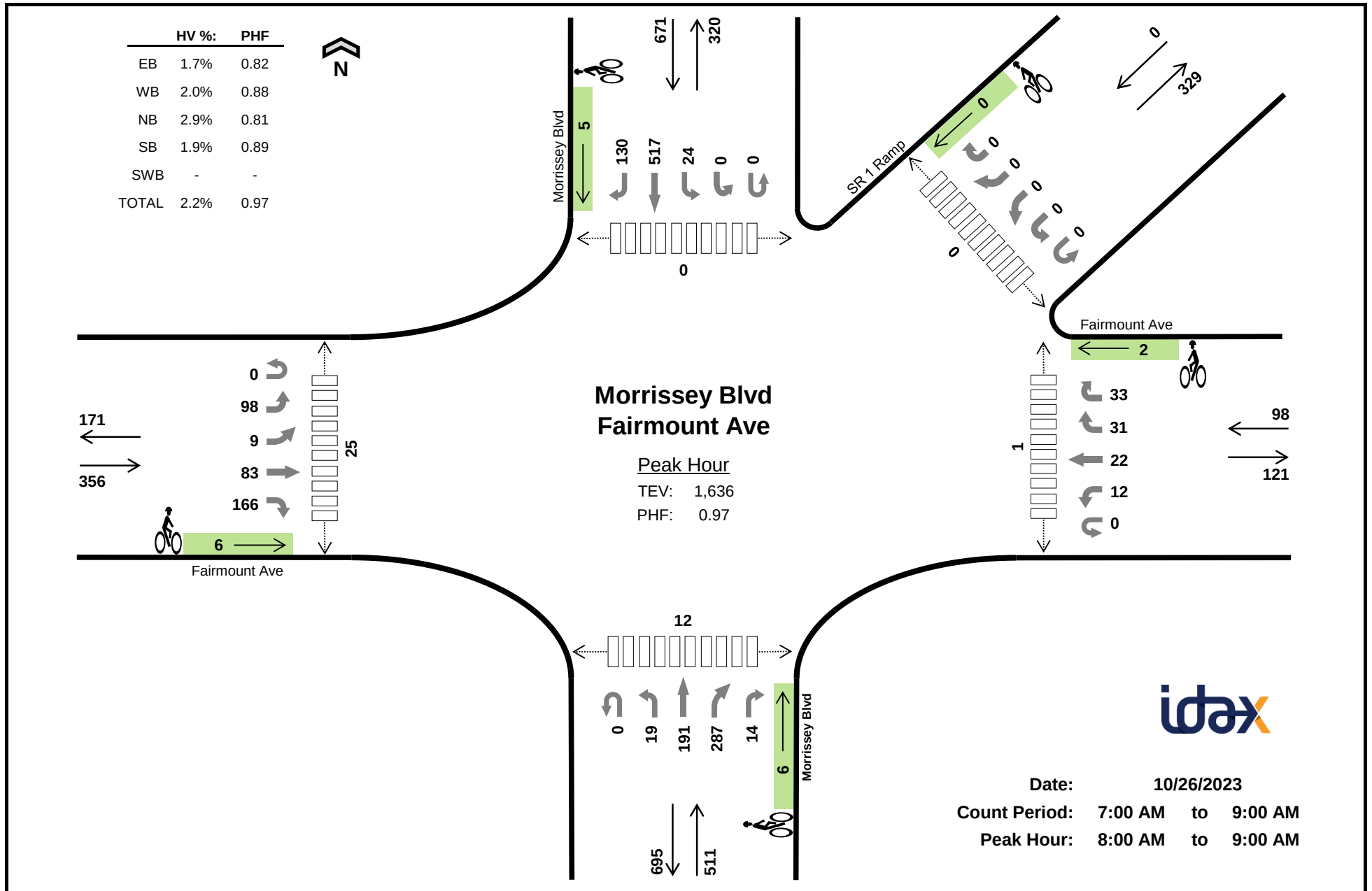
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	1	0	0	7	5	3	1	0	9	3	0	1	0	4
4:15 PM	4	3	4	0	11	4	5	2	0	11	1	6	4	1	12
4:30 PM	12	0	1	0	13	6	2	6	0	14	6	0	5	0	11
4:45 PM	3	4	0	0	7	5	4	0	0	9	0	1	4	0	5
5:00 PM	8	1	1	0	10	8	2	1	0	11	4	0	2	2	8
5:15 PM	2	2	2	0	6	6	3	1	0	10	1	0	5	0	6
5:30 PM	6	2	2	0	10	8	6	1	0	15	1	0	1	0	2
5:45 PM	1	1	2	0	4	4	1	0	0	5	2	0	2	0	4
Count Total	42	14	12	0	68	46	26	12	0	84	18	7	24	3	52
Peak Hour	25	8	5	0	38	20	14	9	0	43	10	7	14	1	32

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Soquel Ave				Soquel Ave				Capitola Rd				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	1	0	0	1	0	0	0	0	0	0	0	0	0	7	0
4:15 PM	0	0	2	2	0	1	2	0	0	4	0	0	0	0	0	0	11	0
4:30 PM	0	0	5	7	0	0	0	0	0	1	0	0	0	0	0	0	13	0
4:45 PM	0	0	1	2	0	0	4	0	0	0	0	0	0	0	0	0	7	38
5:00 PM	0	0	6	2	0	0	1	0	0	1	0	0	0	0	0	0	10	41
5:15 PM	0	0	1	1	0	0	2	0	0	2	0	0	0	0	0	0	6	36
5:30 PM	0	0	3	3	0	0	2	0	0	2	0	0	0	0	0	0	10	33
5:45 PM	0	0	1	0	0	0	1	0	0	2	0	0	0	0	0	0	4	30
Count Total	0	0	24	18	0	1	13	0	0	12	0	0	0	0	0	0	68	0
Peak Hour	0	0	13	12	0	1	7	0	0	5	0	0	0	0	0	0	38	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Soquel Ave			Soquel Ave			Capitola Rd			Driveway			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	4	1	0	3	0	1	0	0	0	0	0	9	0			
4:15 PM	0	2	2	0	5	0	2	0	0	0	0	0	11	0			
4:30 PM	0	2	4	0	2	0	6	0	0	0	0	0	14	0			
4:45 PM	0	1	4	0	4	0	0	0	0	0	0	0	9	43			
5:00 PM	0	4	4	0	2	0	1	0	0	0	0	0	11	45			
5:15 PM	0	3	3	0	3	0	1	0	0	0	0	0	10	44			
5:30 PM	0	6	2	0	6	0	1	0	0	0	0	0	15	45			
5:45 PM	0	3	1	0	1	0	0	0	0	0	0	0	5	41			
Count Total	0	25	21	0	26	0	12	0	0	0	0	0	84	0			
Peak Hour	0	9	11	0	14	0	9	0	0	0	0	0	43	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries

Interval Start		Fairmount Ave Eastbound					Fairmount Ave Westbound					Morrissey Blvd Northbound					Morrissey Blvd Southbound					SR 1 Ramp Southwestbound					15-min Total	Rolling One Hour
		UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:00 AM		0	10	2	9	15	0	2	1	4	7	0	1	28	37	0	0	0	0	43	8	0	0	0	0	0	167	0
7:15 AM		0	9	0	7	14	0	1	0	5	2	0	0	31	49	0	0	0	2	68	17	0	0	0	0	0	205	0
7:30 AM		0	27	5	10	22	0	4	3	15	8	0	1	28	47	0	0	0	3	84	15	0	0	0	0	0	272	0
7:45 AM		0	35	5	16	30	0	1	0	16	8	0	1	48	88	3	0	0	5	90	16	0	0	0	0	0	362	1,006
8:00 AM		0	42	3	18	45	0	0	5	11	4	0	3	44	59	3	0	0	4	134	42	0	0	0	0	0	417	1,256
8:15 AM		0	29	0	24	35	0	4	7	7	8	0	7	35	76	3	0	0	5	142	41	0	0	0	0	0	423	1,474
8:30 AM		0	14	3	21	34	0	4	7	9	8	0	6	60	86	6	0	0	8	131	21	0	0	0	0	0	418	1,620
8:45 AM		0	13	3	20	52	0	4	3	4	13	0	3	52	66	2	0	0	7	110	26	0	0	0	0	0	378	1,636
Count Total		0	179	21	125	247	0	20	26	71	58	0	22	326	508	17	0	0	34	802	186	0	0	0	0	0	2,642	0
Peak Hour	All	0	98	9	83	166	0	12	22	31	33	0	19	191	287	14	0	0	24	517	130	0	0	0	0	0	1,636	0
	HV	0	2	0	0	4	0	0	0	1	1	0	0	4	11	0	0	0	3	8	2	0	0	0	0	0	36	0
	HV%	-	2%	0%	0%	2%	-	0%	0%	3%	3%	-	0%	2%	4%	0%	-	-	13%	2%	2%	-	-	-	-	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

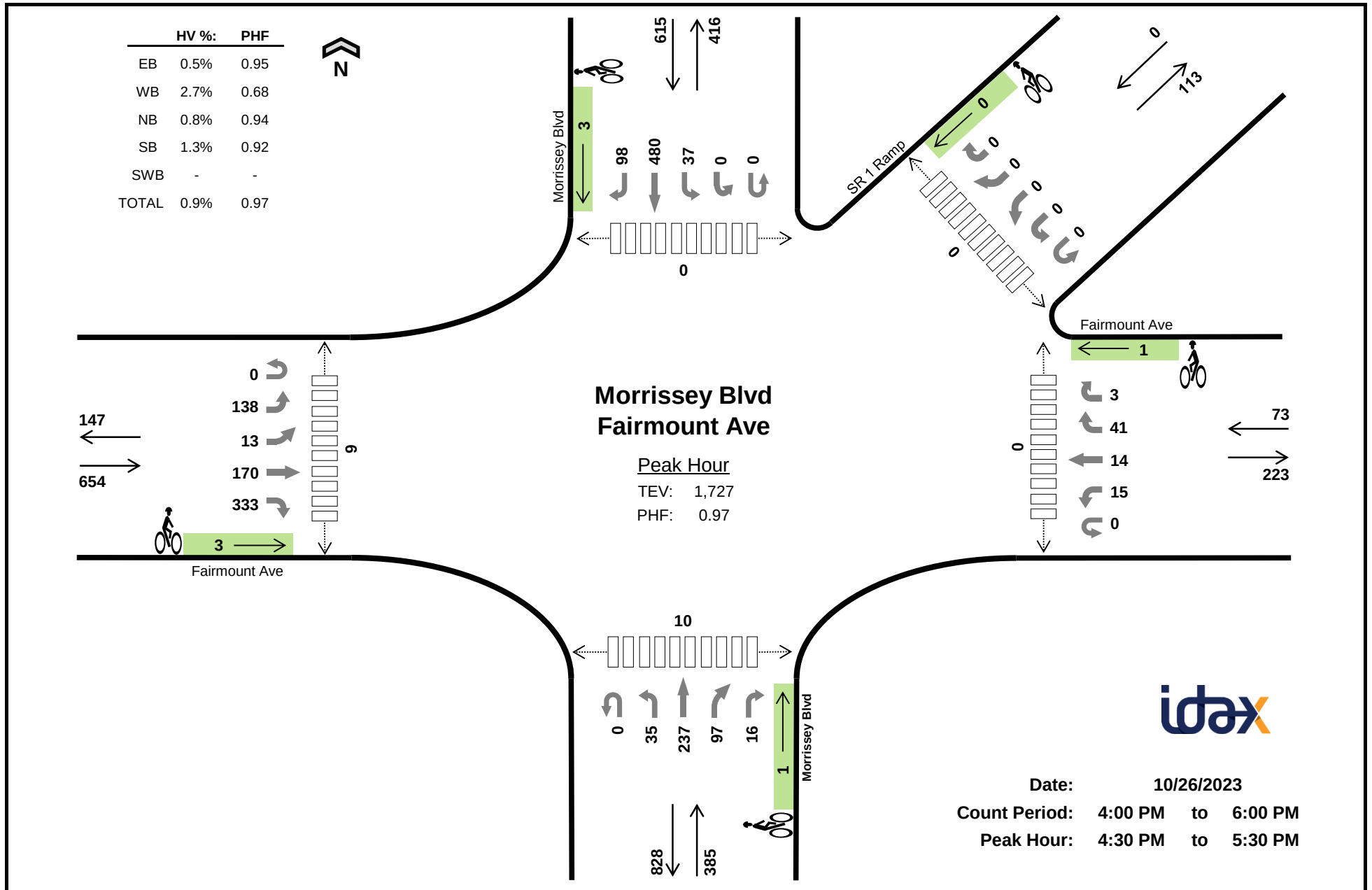
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SWB	Total	EB	WB	NB	SB	SWB	Total	East	West	North	South	Northeast	Total
7:00 AM	3	0	1	1	0	5	0	1	1	0	0	2	0	2	0	0	0	2
7:15 AM	0	0	2	3	0	5	0	0	0	1	0	1	0	0	0	1	0	1
7:30 AM	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	3	0	2	2	0	7	0	0	0	0	0	0	1	5	0	6	0	12
8:00 AM	1	0	2	2	0	5	1	0	2	2	0	5	1	18	0	6	0	25
8:15 AM	0	1	5	5	0	11	4	0	1	0	0	5	0	5	0	3	0	8
8:30 AM	2	1	3	3	0	9	1	0	1	3	0	5	0	2	0	1	0	3
8:45 AM	3	0	5	3	0	11	0	2	2	0	0	4	0	0	0	2	0	2
Count Total	12	2	21	20	0	55	6	3	7	6	0	22	2	32	0	19	0	53
Peak Hr	6	2	15	13	0	36	6	2	6	5	0	19	1	25	0	12	0	38

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Fairmount Ave Eastbound					Fairmount Ave Westbound					Morrissey Blvd Northbound					Morrissey Blvd Southbound					SR 1 Ramp Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:00 AM	0	1	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	5	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2	0
7:45 AM	0	2	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	7	19
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	5	19
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	4	0	0	0	1	2	2	0	0	0	0	0	11	25
8:30 AM	0	1	0	0	1	0	0	0	1	0	0	0	2	1	0	0	0	1	2	0	0	0	0	0	0	9	32
8:45 AM	0	1	0	0	2	0	0	0	0	0	0	0	1	4	0	0	0	1	2	0	0	0	0	0	0	11	36
Count Total	0	5	0	0	7	0	0	0	1	1	0	0	5	16	0	0	0	4	14	2	0	0	0	0	0	55	0
Peak Hour	0	2	0	0	4	0	0	0	1	1	0	0	4	11	0	0	0	3	8	2	0	0	0	0	0	36	0

Two-Hour Count Summaries - Bikes

Interval Start	Fairmount Ave Eastbound					Fairmount Ave Westbound					Morrissey Blvd Northbound					Morrissey Blvd Southbound					SR 1 Ramp Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	5	6
8:15 AM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	10
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	5	15
8:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	19
Count Total	0	0	0	5	1	0	0	3	0	0	0	3	0	0	4	0	0	0	3	3	0	0	0	0	0	22	0
Peak Hour	0	0	0	5	1	0	0	2	0	0	0	3	0	0	3	0	0	0	2	3	0	0	0	0	0	19	0



Two-Hour Count Summaries

Interval Start		Fairmount Ave Eastbound					Fairmount Ave Westbound					Morrissey Blvd Northbound					Morrissey Blvd Southbound					SR 1 Ramp Southwestbound					15-min Total	Rolling One Hour
		UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM		0	34	10	45	81	0	3	6	11	1	0	6	61	21	3	0	0	9	139	23	0	0	0	0	0	453	0
4:15 PM		0	36	5	33	82	0	4	3	8	1	0	11	62	17	4	0	0	9	131	23	0	0	0	0	0	429	0
4:30 PM		0	32	3	44	74	0	3	2	11	0	0	7	63	26	4	0	0	14	115	18	0	0	0	0	0	416	0
4:45 PM		0	39	5	45	84	0	4	3	9	1	0	12	50	23	4	0	0	6	104	30	0	0	0	0	0	419	1,717
5:00 PM		0	35	2	35	85	0	4	6	16	1	0	13	59	19	3	0	0	5	133	30	0	0	0	0	0	446	1,710
5:15 PM		0	32	3	46	90	0	4	3	5	1	0	3	65	29	5	0	0	12	128	20	0	0	0	0	0	446	1,727
5:30 PM		0	20	3	43	98	0	4	5	12	1	0	4	43	22	2	0	0	5	111	15	0	0	0	0	0	388	1,699
5:45 PM		0	24	5	20	76	0	1	1	10	0	0	9	42	8	4	0	0	8	127	17	0	0	0	0	0	352	1,632
Count Total		0	252	36	311	670	0	27	29	82	6	0	65	445	165	29	0	0	68	988	176	0	0	0	0	0	3,349	0
Peak Hour	All	0	138	13	170	333	0	15	14	41	3	0	35	237	97	16	0	0	37	480	98	0	0	0	0	0	1,727	0
	HV	0	0	0	0	3	0	0	1	0	1	0	0	2	1	0	0	0	1	5	2	0	0	0	0	0	16	0
	HV%	-	0%	0%	0%	1%	-	0%	7%	0%	33%	-	0%	1%	1%	0%	-	-	3%	1%	2%	-	-	-	-	-	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

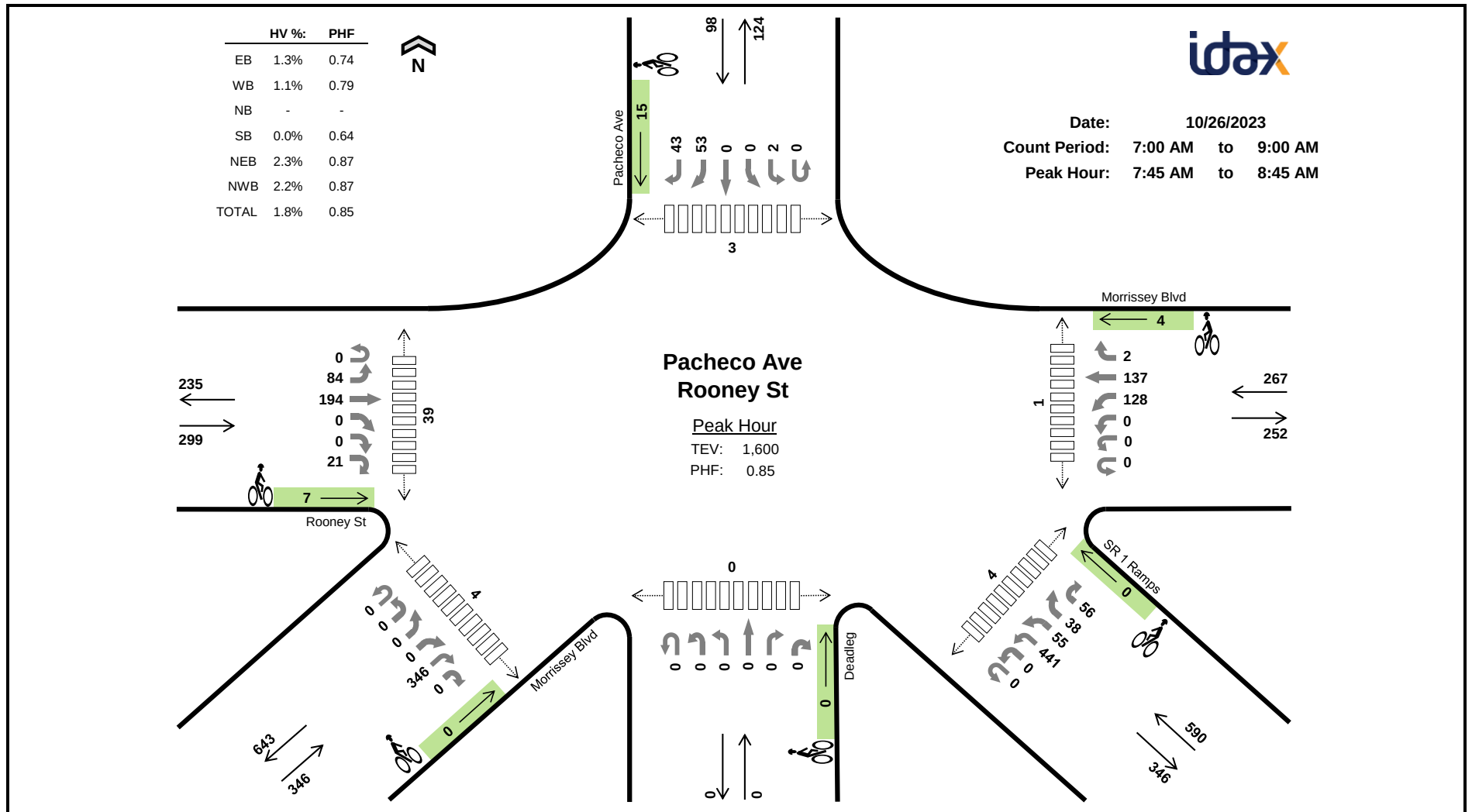
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	SWB	Total	EB	WB	NB	SB	SWB	Total	East	West	North	South	Northeast	Total
4:00 PM	4	0	1	2	0	7	0	0	0	0	0	0	0	3	0	1	0	4
4:15 PM	4	0	2	2	0	8	0	0	0	0	0	0	2	4	0	2	0	8
4:30 PM	0	0	1	4	0	5	1	1	0	0	0	2	0	5	0	5	0	10
4:45 PM	1	2	1	3	0	7	1	0	0	1	0	2	0	1	0	2	0	3
5:00 PM	1	0	0	1	0	2	1	0	0	0	0	1	0	3	0	1	0	4
5:15 PM	1	0	1	0	0	2	0	0	1	2	0	3	0	0	0	2	0	2
5:30 PM	1	0	2	0	0	3	0	3	0	0	0	3	1	6	0	6	0	13
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Count Total	12	2	8	12	0	34	3	4	1	3	0	11	3	22	0	20	0	45
Peak Hr	3	2	3	8	0	16	3	1	1	3	0	8	0	9	0	10	0	19

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Fairmount Ave Eastbound					Fairmount Ave Westbound					Morrissey Blvd Northbound					Morrissey Blvd Southbound					SR 1 Ramp Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	7	0
4:15 PM	0	3	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	8	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	1	0	0	0	0	0	5	0
4:45 PM	0	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	7	27
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	22
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	16
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	14
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Count Total	0	3	0	1	8	0	0	1	0	1	0	0	6	2	0	0	0	2	8	2	0	0	0	0	0	34	0
Peak Hour	0	0	0	0	3	0	0	1	0	1	0	0	2	1	0	0	0	1	5	2	0	0	0	0	0	16	0

Two-Hour Count Summaries - Bikes

Interval Start	Fairmount Ave Eastbound					Fairmount Ave Westbound					Morrissey Blvd Northbound					Morrissey Blvd Southbound					SR 1 Ramp Southwestbound					15-min Total	Rolling One Hour
	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	LT	TH	BR	RT	UT	HL	LT	TH	RT	UT	HL	BL	BR	HR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	4
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3	8
5:30 PM	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Count Total	0	0	0	2	1	1	1	2	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	11	0
Peak Hour	0	0	0	2	1	0	1	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	8	0



Two-Hour Count Summaries

Interval Start	Rooney St Eastbound						Morrissey Blvd Westbound						Deadleg Northbound						Pacheco Ave Southbound						Morrissey Blvd Northeastbound						SR 1 Ramps Northwestbound						15-min Total	Rolling One Hour
	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	TH	RT	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	BL	BR	RT	HR	UT	HL	LT	BL	BR	HR		
7:00 AM	0	6	5	0	0	2	0	0	0	3	13	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	44	0	0	0	47	3	15	2	142	0
7:15 AM	1	9	4	0	0	6	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	5	6	0	0	0	0	45	0	0	68	10	9	3	184	0	
7:30 AM	0	3	23	0	0	4	0	0	0	9	18	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	69	0	0	88	16	5	6	247	0	
7:45 AM	0	13	46	0	0	5	0	0	0	16	19	1	0	0	0	0	0	0	0	1	0	0	3	8	0	0	0	0	94	0	0	91	16	10	12	335	908	
8:00 AM	0	36	63	0	0	2	0	0	0	47	36	1	0	0	0	0	0	0	0	0	0	0	17	21	0	0	0	0	99	0	0	0	113	12	8	14	469	1,235
8:15 AM	0	30	55	0	0	4	0	0	0	42	40	0	0	0	0	0	0	0	0	1	0	0	0	21	7	0	0	0	71	0	0	0	121	10	13	26	441	1,492
8:30 AM	0	5	30	0	0	10	0	0	0	23	42	0	0	0	0	0	0	0	0	0	0	0	12	7	0	0	0	0	82	0	0	0	116	17	7	4	355	1,600
8:45 AM	0	7	20	0	0	7	0	0	0	16	13	0	0	0	0	0	0	0	0	1	0	0	0	8	10	0	0	0	65	0	0	0	113	15	4	10	289	1,554
Count Total	1	109	246	0	0	40	0	0	0	165	190	2	0	0	0	0	0	0	0	3	0	0	0	68	65	0	0	0	0	569	0	0	757	99	71	77	2,462	0
Peak Hour	All	0	84	194	0	0	21	0	0	0	128	137	2	0	0	0	0	0	0	2	0	0	0	53	43	0	0	0	0	346	0	0	441	55	38	56	1,600	0
	HV	0	1	2	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	11	2	0	0	28	0
	HV%	-	1%	1%	-	-	5%	-	-	-	1%	1%	0%	-	-	-	-	-	-	-	0%	-	-	0%	0%	-	-	-	-	2%	-	-	-	2%	4%	0%	0%	2%

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
	EB	WB	NB	SB	NEB	NWB	Total	EB	WB	NB	SB	NEB	NWB	Total	East	West	North	South	SE	SW	Total
7:00 AM	0	1	0	0	1	1	3	0	0	0	0	0	0	0	0	2	0	0	0	0	2
7:15 AM	0	0	0	0	0	3	3	0	0	0	1	0	0	1	0	2	0	0	0	0	2
7:30 AM	0	1	0	0	0	3	4	0	0	0	0	0	0	0	0	1	1	0	0	0	2
7:45 AM	1	0	0	0	2	3	6	0	0	0	0	0	0	0	1	6	1	0	0	0	8
8:00 AM	1	0	0	0	1	3	5	2	1	0	9	0	0	12	0	24	1	0	1	1	27
8:15 AM	1	1	0	0	1	3	6	5	0	0	2	0	0	7	0	6	0	0	3	3	12
8:30 AM	1	2	0	0	4	4	11	0	3	0	4	0	0	7	0	3	1	0	0	0	4
8:45 AM	1	0	0	0	2	5	8	0	0	0	1	0	0	1	0	2	1	0	1	1	5
Count Total	5	5	0	0	11	25	46	7	4	0	17	0	0	28	1	46	5	0	5	5	62
Peak Hr	4	3	0	0	8	13	28	7	4	0	15	0	0	26	1	39	3	0	4	4	51

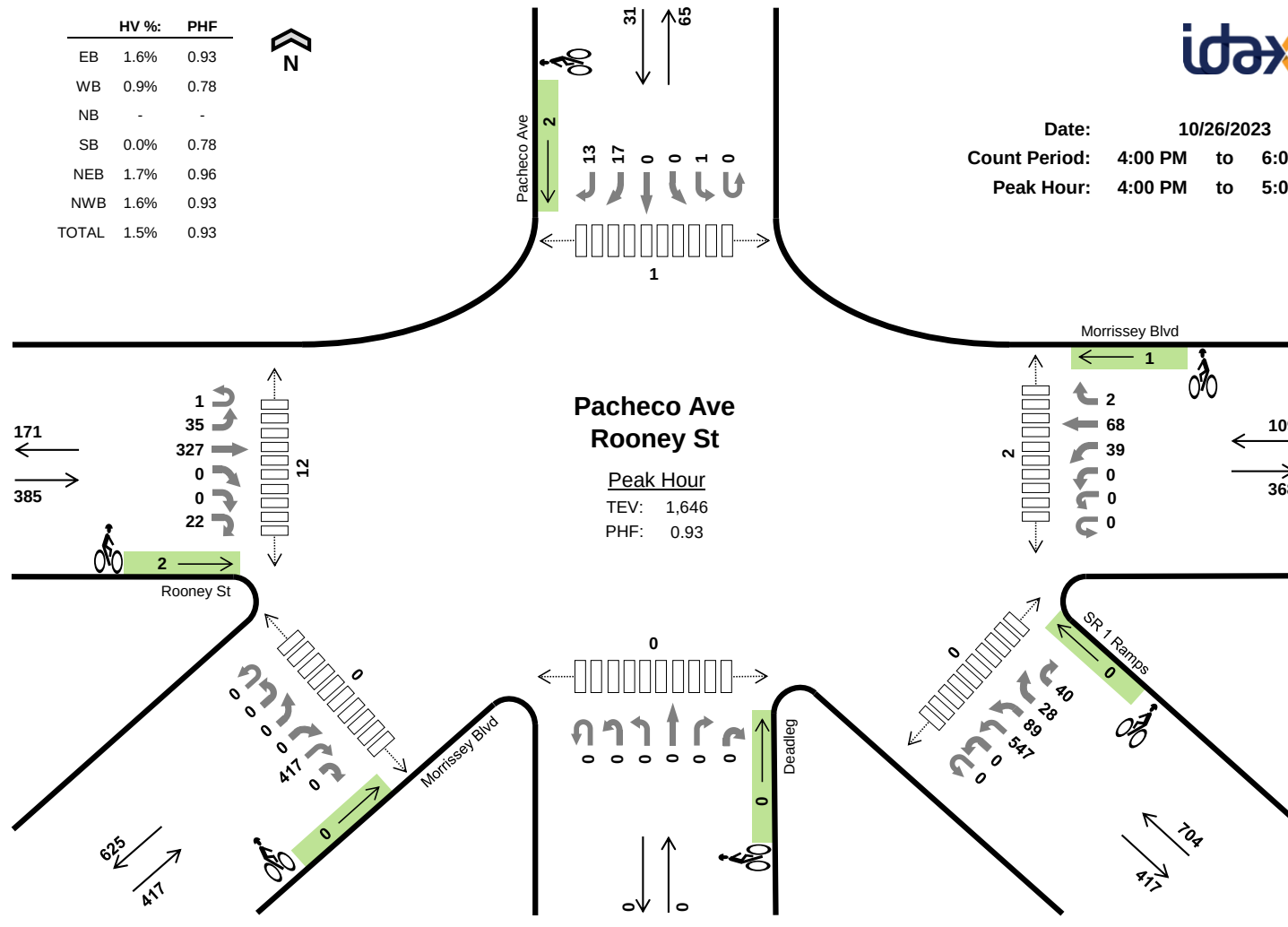
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Rooney St Eastbound						Morrissey Blvd Westbound						Deadleg Northbound						Pacheco Ave Southbound						Morrissey Blvd Northbound						SR 1 Ramps Northwestbound						15-min Total	Rolling One Hour
	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	TH	RT	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	BL	BR	RT	HR	UT	HL	LT	BL	BR	HR		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	4	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	6	16
8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	5	18
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	6	21
8:30 AM	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	11	28
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	2	0	0	8	30
Count Total	0	1	3	0	0	1	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	18	7	0	0	46	0
Peak Hour	0	1	2	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	11	2	0	0	28	0

Two-Hour Count Summaries - Bikes

[illegible]

Date: 10/26/2023
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



Two-Hour Count Summaries

Interval Start	Rooney St Eastbound						Morrissey Blvd Westbound						Deadleg Northbound						Pacheco Ave Southbound						Morrissey Blvd Northeastbound						SR 1 Ramps Northwestbound						15-min Total	Rolling One Hour
	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	TH	RT	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	BL	BR	RT	HR	UT	HL	LT	BL	BR	HR		
4:00 PM	0	7	90	0	0	6	0	0	0	13	22	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	109	0	0	0	152	16	8	13	441	0
4:15 PM	0	11	88	0	0	4	0	0	0	10	11	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	0	108	0	0	0	145	26	5	9	426	0	
4:30 PM	0	8	71	0	0	9	0	0	0	14	19	1	0	0	0	0	0	0	0	0	0	4	6	0	0	0	0	106	0	0	0	121	18	11	10	398	0	
4:45 PM	1	9	78	0	0	3	0	0	0	2	16	1	0	0	0	0	0	0	0	1	0	0	5	1	0	0	0	94	0	0	0	129	29	4	8	381	1,646	
5:00 PM	0	13	64	0	0	7	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	7	5	0	0	0	0	110	0	0	0	148	24	10	17	427	1,632	
5:15 PM	0	12	63	0	0	3	0	0	0	10	17	0	0	0	0	0	0	0	0	1	0	0	3	2	0	0	0	102	0	0	0	137	24	10	7	391	1,597	
5:30 PM	0	12	49	0	0	9	0	0	0	8	12	0	0	0	0	0	0	0	0	1	0	0	2	3	0	0	0	76	0	0	0	116	16	11	6	321	1,520	
5:45 PM	0	15	37	0	0	3	0	0	0	14	19	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	74	0	0	0	127	32	4	5	336	1,475		
Count Total	1	87	540	0	0	44	0	0	0	82	127	2	0	0	0	0	0	0	0	3	0	0	34	24	0	0	0	779	0	0	0	1,075	185	63	75	3,121	0	
Peak Hour	All	1	35	327	0	0	22	0	0	0	39	68	2	0	0	0	0	0	0	1	0	0	17	13	0	0	0	0	417	0	0	0	547	89	28	40	1,646	0
	HV	0	0	5	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	10	1	0	0	25	0	
	HV%	0%	0%	2%	-	-	5%	-	-	-	3%	0%	0%	-	-	-	-	-	-	0%	-	-	0%	0%	-	-	-	2%	-	-	-	2%	1%	0%	0%	2%	0	

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

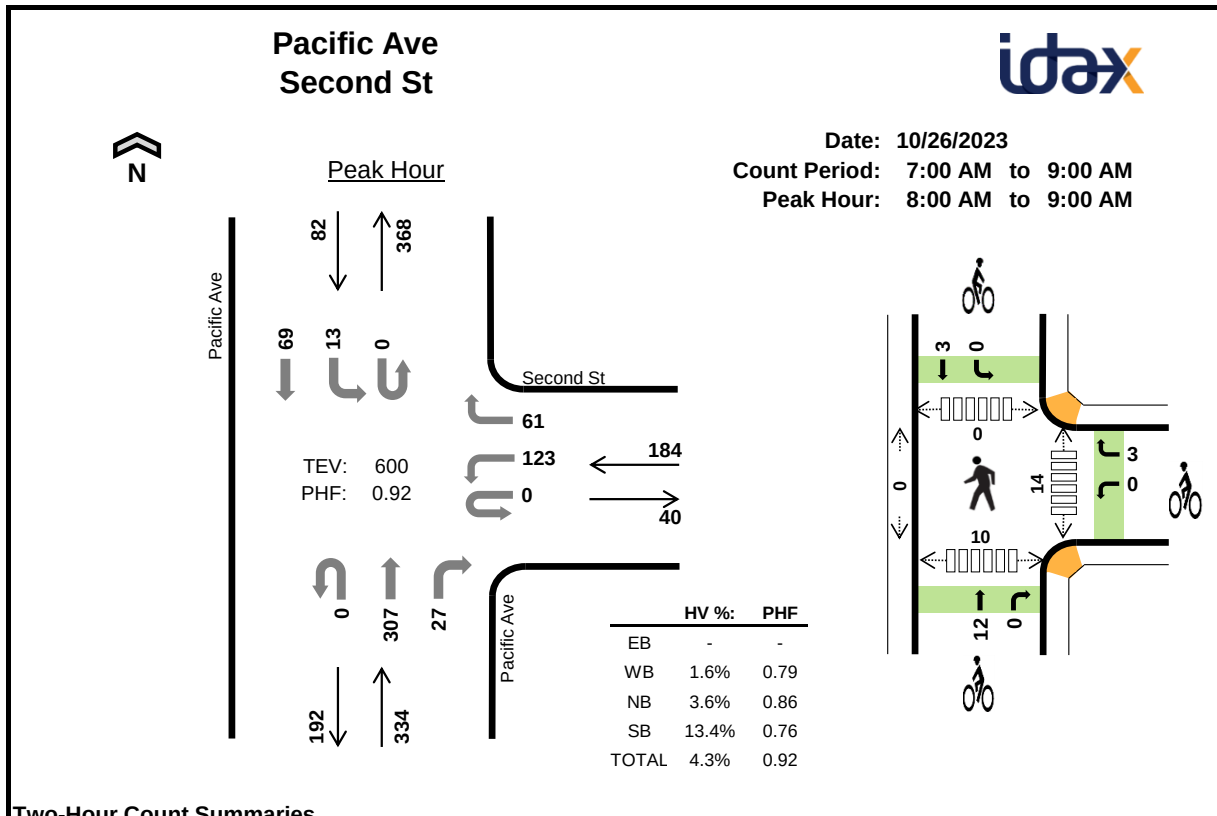
Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)							15-min Total	Rolling One Hour
	EB	WB	NB	SB	NEB	NWB	Total	EB	WB	NB	SB	NEB	NWB	Total	East	West	North	South	SE	SW	Total		
4:00 PM	1	0	0	0	2	3	6	1	1	0	1	0	0	3	2	4	0	0	0	0	6	0	0
4:15 PM	3	0	0	0	2	2	7	1	0	0	0	0	0	1	0	3	0	0	0	0	3	0	0
4:30 PM	0	1	0	0	1	4	6	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0
4:45 PM	2	0	0	0	2	2	6	0	0	0	1	0	0	1	0	3	1	0	0	0	4	0	0
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0	2	0	0
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	3	0	0
5:30 PM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	0	0	0	0	3	0	0
Count Total	6	1	0	0	9	11	27	4	2	0	2	0	0	8	3	22	2	0	0	0	27	0	0
Peak Hr	6	1	0	0	7	11	25	2	1	0	2	0	0	5	2	12	1	0	0	0	15	0	0

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Rooney St Eastbound						Morrissey Blvd Westbound						Deadleg Northbound						Pacheco Ave Southbound						Morrissey Blvd Northeastbound						SR 1 Ramps Northwestbound						15-min Total	Rolling One Hour
	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	TH	RT	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	BL	BR	RT	HR	UT	HL	LT	BL	BR	HR		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	6	0
4:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	7	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	1	0	0	6	0
4:45 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	6	25
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	5	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	10	1	0	0	27	0
Peak Hour	0	0	5	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	10	1	0	0	25	0

Two-Hour Count Summaries - Bikes

Interval Start	Rooney St						Morrissey Blvd						Deadleg						Pacheco Ave						Morrissey Blvd						SR 1 Ramps						15-min Total	Rolling One Hour
	Eastbound						Westbound						Northbound						Southbound						Northwestbound						Northeastbound							
	UT	LT	TH	BR	RT	HR	UT	HL	LT	BL	TH	RT	UT	HL	LT	TH	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	BL	BR	RT	HR	UT	HL	LT	BL	BR	HR		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3		
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3		
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3		
Count Total	0	0	2	0	0	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	8	0		
Peak Hour	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0		

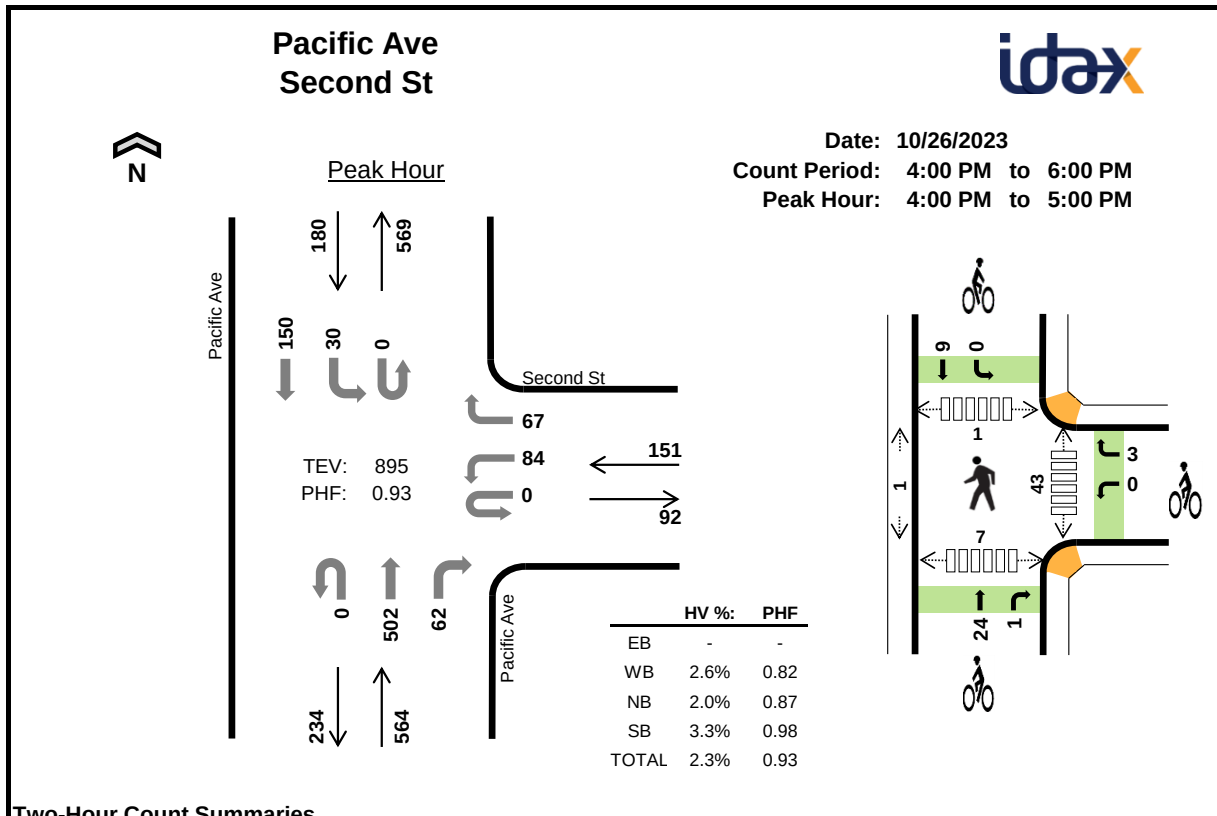
**Two-Hour Count Summaries**

Interval Start		N/A				Second St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	12	0	4	0	0	26	1	0	3	11	0	57	0
7:15 AM		0	0	0	0	0	13	0	15	0	0	25	0	0	4	7	0	64	0
7:30 AM		0	0	0	0	0	23	0	7	0	0	54	6	0	1	7	0	98	0
7:45 AM		0	0	0	0	0	27	0	13	0	0	55	4	0	1	11	0	111	330
8:00 AM		0	0	0	0	0	39	0	19	0	0	63	4	0	2	11	0	138	411
8:15 AM		0	0	0	0	0	36	0	17	0	0	76	7	0	5	15	0	156	503
8:30 AM		0	0	0	0	0	24	0	15	0	0	87	10	0	4	23	0	163	568
8:45 AM		0	0	0	0	0	24	0	10	0	0	81	6	0	2	20	0	143	600
Count Total		0	0	0	0	0	198	0	100	0	0	467	38	0	22	105	0	930	0
Peak Hour	All	0	0	0	0	0	123	0	61	0	0	307	27	0	13	69	0	600	0
	HV	0	0	0	0	0	2	0	1	0	0	11	1	0	0	11	0	26	0
	HV%	-	-	-	-	-	2%	-	2%	-	-	4%	4%	-	0%	16%	-	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	2	1	2	5	0	0	2	0	2	2	0	0	4	6
7:15 AM	0	2	3	2	7	0	2	1	2	5	2	0	0	0	2
7:30 AM	0	4	3	2	9	0	0	2	1	3	2	1	0	2	5
7:45 AM	0	3	3	0	6	0	0	0	0	0	2	0	0	2	4
8:00 AM	0	0	3	1	4	0	0	3	2	5	3	0	0	0	3
8:15 AM	0	1	4	2	7	0	2	1	0	3	2	0	0	0	2
8:30 AM	0	1	2	6	9	0	0	4	0	4	7	0	0	2	9
8:45 AM	0	1	3	2	6	0	1	4	1	6	2	0	0	8	10
Count Total	0	14	22	17	53	0	5	17	6	28	22	1	0	18	41
Peak Hr	0	3	12	11	26	0	3	12	3	18	14	0	0	10	24

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	N/A				Second St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	2	0	5	0
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	3	0	0	0	2	0	7	0
7:30 AM	0	0	0	0	0	2	0	2	0	0	0	3	0	0	0	2	0	9	0
7:45 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	6	27
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	26
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	2	0	7	26
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	6	0	9	26
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	2	0	6	26
Count Total	0	0	0	0	0	7	0	7	0	0	21	1	0	0	17	0	53	0	
Peak Hour	0	0	0	0	0	2	0	1	0	0	11	1	0	0	11	0	26	0	
Two-Hour Count Summaries - Bikes																			
Interval Start	N/A			Second St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2	0	0		
7:15 AM	0	0	0	1	0	1	0	1	0	0	2	0	0	2	5	0	0		
7:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	0	1	3	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10		
8:00 AM	0	0	0	0	0	0	0	3	0	0	2	0	0	2	5	13			
8:15 AM	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	11			
8:30 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	4	12				
8:45 AM	0	0	0	0	0	1	0	4	0	0	1	0	0	6	18				
Count Total	0	0	0	1	0	4	0	17	0	0	6	0	0	28	0				
Peak Hour	0	0	0	0	0	3	0	12	0	0	3	0	0	18	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																			

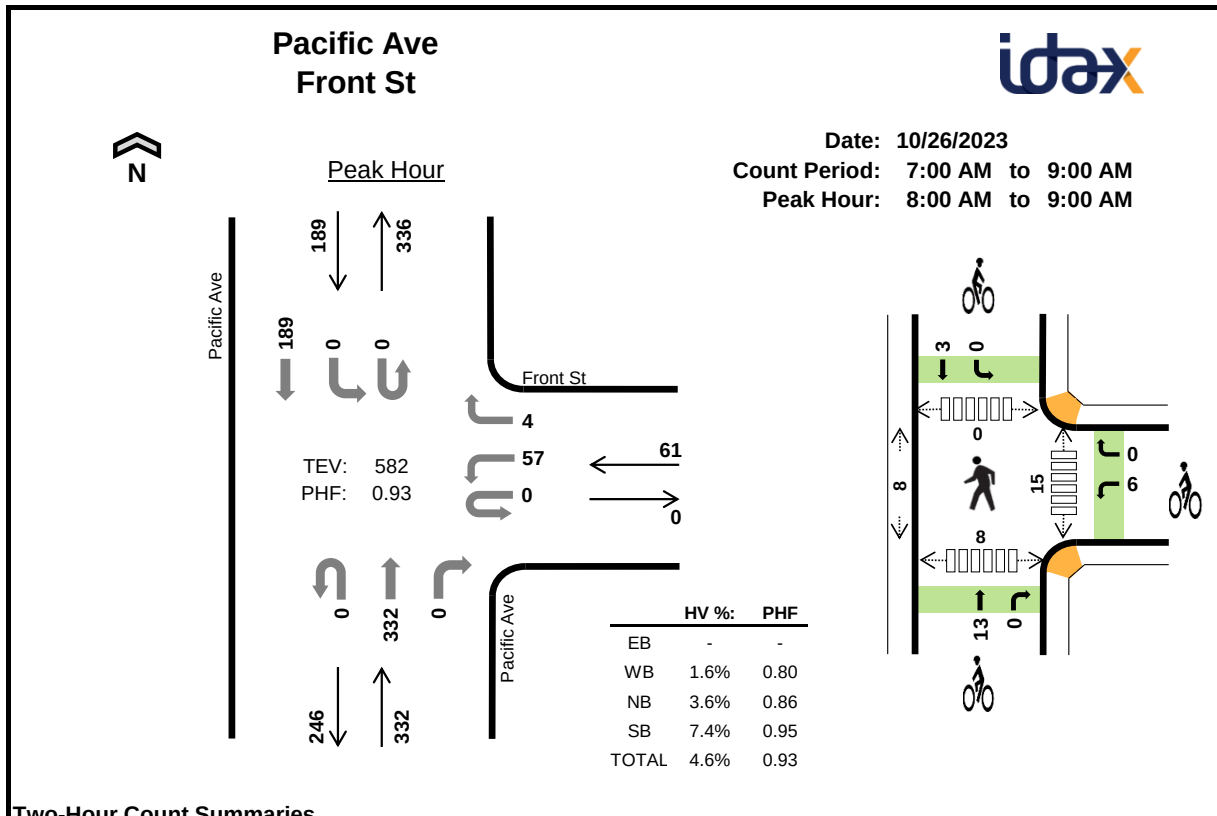
**Two-Hour Count Summaries**

Interval Start		N/A				Second St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	16	0	12	0	0	123	18	0	6	38	0	213	0
4:15 PM		0	0	0	0	0	22	0	11	0	0	138	24	0	9	36	0	240	0
4:30 PM		0	0	0	0	0	23	0	21	0	0	124	11	0	8	37	0	224	0
4:45 PM		0	0	0	0	0	23	0	23	0	0	117	9	0	7	39	0	218	895
5:00 PM		0	0	0	0	0	34	0	23	1	0	88	10	0	7	43	0	206	888
5:15 PM		0	0	0	0	0	25	0	31	0	0	121	11	0	8	37	0	233	881
5:30 PM		0	0	0	0	0	17	0	22	0	0	107	17	0	8	48	0	219	876
5:45 PM		0	0	0	0	0	18	0	25	0	0	110	18	0	7	38	0	216	874
Count Total		0	0	0	0	0	178	0	168	1	0	928	118	0	60	316	0	1,769	0
Peak Hour	All	0	0	0	0	0	84	0	67	0	0	502	62	0	30	150	0	895	0
	HV	0	0	0	0	0	2	0	2	0	0	11	0	0	0	6	0	21	0
	HV%	-	-	-	-	-	2%	-	3%	-	-	2%	0%	-	0%	4%	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	6	2	9	0	1	3	2	6	7	1	1	1	10
4:15 PM	0	0	3	1	4	0	1	9	3	13	7	0	0	0	7
4:30 PM	0	2	1	2	5	0	1	6	1	8	19	0	0	1	20
4:45 PM	0	1	1	1	3	0	0	7	3	10	10	0	0	5	15
5:00 PM	0	0	1	1	2	0	0	8	9	17	11	1	0	3	15
5:15 PM	0	0	1	1	2	0	0	9	2	11	12	2	0	0	14
5:30 PM	0	0	2	2	4	0	1	12	4	17	11	1	1	0	13
5:45 PM	0	0	2	1	3	0	0	4	3	7	4	1	0	8	13
Count Total	0	4	17	11	32	0	4	58	27	89	81	6	2	18	107
Peak Hr	0	4	11	6	21	0	3	25	9	37	43	1	1	7	52

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	N/A				Second St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	6	0	0	0	2	0	9	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	0
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	2	0	5	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	3	21
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	14
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	12
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	11
Count Total	0	0	0	0	0	2	0	2	0	0	0	17	0	0	0	11	0	32	0
Peak Hour	0	0	0	0	0	2	0	2	0	0	0	11	0	0	0	6	0	21	0
Two-Hour Count Summaries - Bikes																			
Interval Start	N/A			Second St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
4:00 PM	0	0	0	0	0	1	0	3	0	0	2	0	6	0	0				
4:15 PM	0	0	0	0	0	1	0	8	1	0	3	0	13	0	0				
4:30 PM	0	0	0	0	0	1	0	6	0	0	1	0	8	0	0				
4:45 PM	0	0	0	0	0	0	0	7	0	0	3	0	10	37	0				
5:00 PM	0	0	0	0	0	0	0	8	0	1	8	0	17	48	0				
5:15 PM	0	0	0	0	0	0	0	9	0	0	2	0	11	46	0				
5:30 PM	0	0	0	1	0	0	0	11	1	0	4	0	17	55	0				
5:45 PM	0	0	0	0	0	0	0	4	0	2	1	0	7	52	0				
Count Total	0	0	0	1	0	3	0	56	2	3	24	0	89	0	0				
Peak Hour	0	0	0	0	0	3	0	24	1	0	9	0	37	0	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																			

**Two-Hour Count Summaries**

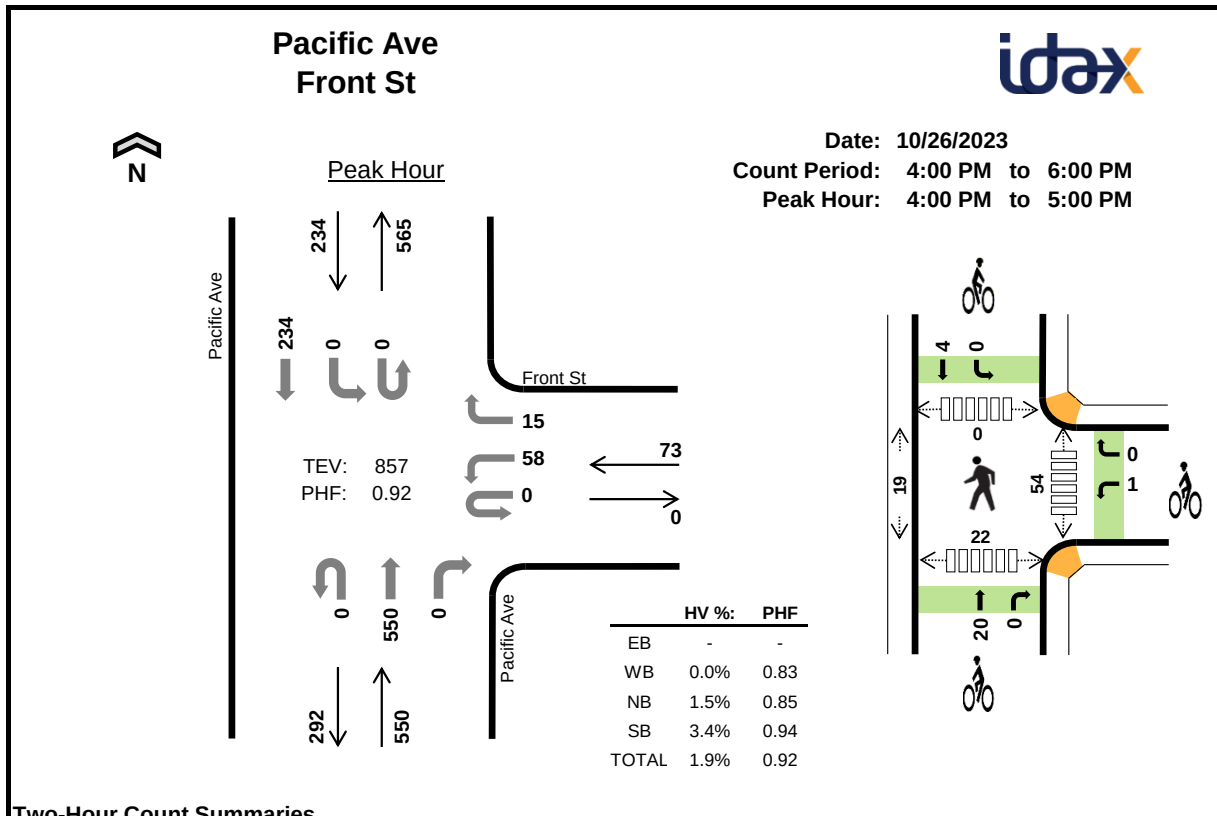
Interval Start		N/A				Front St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	7	0	0	0	0	26	0	0	0	25	0	58	0
7:15 AM		0	0	0	0	0	14	0	1	0	0	23	0	0	0	19	0	57	0
7:30 AM		0	0	0	0	0	8	0	1	0	0	57	0	0	0	27	0	93	0
7:45 AM		0	0	0	0	0	13	0	0	0	0	59	0	0	0	38	0	110	318
8:00 AM		0	0	0	0	0	15	0	1	0	0	65	0	0	0	50	0	131	391
8:15 AM		0	0	0	0	0	19	0	0	0	0	82	0	0	0	49	0	150	484
8:30 AM		0	0	0	0	0	12	0	1	0	0	96	0	0	0	47	0	156	547
8:45 AM		0	0	0	0	0	11	0	2	0	0	89	0	0	0	43	0	145	582
Count Total		0	0	0	0	0	99	0	6	0	0	497	0	0	0	298	0	900	0
Peak Hour	All	0	0	0	0	0	57	0	4	0	0	332	0	0	0	189	0	582	0
	HV	0	0	0	0	0	1	0	0	0	0	12	0	0	0	14	0	27	0
	HV%	-	-	-	-	-	2%	-	0%	-	-	4%	-	-	-	7%	-	5%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	4	5	0	0	1	0	1	2	0	0	0	2
7:15 AM	0	1	3	2	6	0	1	1	2	4	3	1	0	0	4
7:30 AM	0	1	3	3	7	0	2	2	1	5	4	3	0	1	8
7:45 AM	0	0	3	1	4	0	0	0	0	0	4	2	0	0	6
8:00 AM	0	1	2	2	5	0	2	3	2	7	4	2	0	3	9
8:15 AM	0	0	4	2	6	0	0	2	0	2	2	2	0	0	4
8:30 AM	0	0	3	6	9	0	3	4	0	7	3	2	0	3	8
8:45 AM	0	0	3	4	7	0	1	4	1	6	6	2	0	2	10
Count Total	0	3	22	24	49	0	9	17	6	32	28	14	0	9	51
Peak Hr	0	1	12	14	27	0	6	13	3	22	15	8	0	8	31

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	N/A				Front St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	5	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	2	0	6	0
7:30 AM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	0	3	0	7	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	4	22
8:00 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	2	0	5	22
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	0	6	22
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	6	0	9	24
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	4	0	7	27
Count Total	0	0	0	0	0	3	0	0	0	0	22	0	0	0	24	0		49	0
Peak Hour	0	0	0	0	0	1	0	0	0	0	12	0	0	0	14	0		27	0

Two-Hour Count Summaries - Bikes																		
Interval Start	N/A			Front St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0				
7:15 AM	0	0	0	1	0	0	0	1	0	0	2	0	4	0				
7:30 AM	0	0	0	2	0	0	0	2	0	0	1	0	5	0				
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10				
8:00 AM	0	0	0	2	0	0	0	3	0	0	2	0	7	16				
8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2	14				
8:30 AM	0	0	0	3	0	0	0	4	0	0	0	0	7	16				
8:45 AM	0	0	0	1	0	0	0	4	0	0	1	0	6	22				
Count Total	0	0	0	9	0	0	0	17	0	0	6	0	32	0				
Peak Hour	0	0	0	6	0	0	0	13	0	0	3	0	22	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

**Two-Hour Count Summaries**

Interval Start		N/A				Front St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	13	0	3	0	0	136	0	0	0	57	0	209	0
4:15 PM		0	0	0	0	0	13	0	1	0	0	162	0	0	0	57	0	233	0
4:30 PM		0	0	0	0	0	14	0	7	0	0	130	0	0	0	58	0	209	0
4:45 PM		0	0	0	0	0	18	0	4	0	0	122	0	0	0	62	0	206	857
5:00 PM		0	0	0	0	0	9	0	1	0	0	104	0	0	0	73	0	187	835
5:15 PM		0	0	0	0	0	12	0	0	0	0	129	0	0	0	61	0	202	804
5:30 PM		0	0	0	0	0	10	0	1	0	0	128	0	0	0	70	0	209	804
5:45 PM		0	0	0	0	0	16	0	1	0	0	129	0	0	0	51	0	197	795
Count Total		0	0	0	0	0	105	0	18	0	0	1,040	0	0	0	489	0	1,652	0
Peak Hour	All	0	0	0	0	0	58	0	15	0	0	550	0	0	0	234	0	857	0
	HV	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	16	0
	HV%	-	-	-	-	-	0%	-	0%	-	-	1%	-	-	-	3%	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	3	7	0	0	3	2	5	15	10	0	6	31
4:15 PM	0	0	2	2	4	0	0	7	1	8	12	4	0	6	22
4:30 PM	0	0	1	2	3	0	1	5	0	6	14	1	0	4	19
4:45 PM	0	0	1	1	2	0	0	5	1	6	13	4	0	6	23
5:00 PM	0	0	0	1	1	0	0	4	9	13	12	6	0	10	28
5:15 PM	0	0	1	1	2	0	0	7	1	8	14	12	0	10	36
5:30 PM	0	0	2	3	5	0	0	10	4	14	14	13	2	5	34
5:45 PM	0	0	2	1	3	0	0	3	1	4	10	5	0	2	17
Count Total	0	0	13	14	27	0	1	44	19	64	104	55	2	49	210
Peak Hr	0	0	8	8	16	0	1	20	4	25	54	19	0	22	95

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N/A				Front St				Pacific Ave				Pacific Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	7	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	16
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	10
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	11
Count Total	0	0	0	0	0	0	0	0	0	0	13	0	0	0	14	0	27	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	16	0

Two-Hour Count Summaries - Bikes																		
Interval Start	N/A			Front St			Pacific Ave			Pacific Ave			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	3	0	0	2	0	5	0				
4:15 PM	0	0	0	0	0	0	0	7	0	0	1	0	8	0				
4:30 PM	0	0	0	1	0	0	0	5	0	0	0	0	6	0				
4:45 PM	0	0	0	0	0	0	0	5	0	0	1	0	6	25				
5:00 PM	0	0	0	0	0	0	0	4	0	0	9	0	13	33				
5:15 PM	0	0	0	0	0	0	0	7	0	0	1	0	8	33				
5:30 PM	0	0	0	0	0	0	0	10	0	0	4	0	14	41				
5:45 PM	0	0	0	0	0	0	0	3	0	0	1	0	4	39				
Count Total	0	0	0	1	0	0	0	44	0	0	19	0	64	0				
Peak Hour	0	0	0	1	0	0	0	20	0	0	4	0	25	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

Appendix B

Analysis Worksheets for Existing (2023) Conditions

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	238	293	8	4	55
Future Vol, veh/h	30	238	293	8	4	55
Conflicting Peds, #/hr	7	0	0	7	4	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	3	6	13	0	11
Mvmt Flow	33	259	318	9	4	60
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	334	0	-	0	659	338
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.17	-	-	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.263	-	-	-	3.5	3.399
Pot Cap-1 Maneuver	1198	-	-	-	432	684
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1191	-	-	-	415	675
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	730	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		11.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1191	-	-	-	647	
HCM Lane V/C Ratio	0.027	-	-	-	0.099	
HCM Control Delay (s)	8.1	-	-	-	11.2	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	2	0	7	7	7	2	65	6	10	37	15
Future Vol, veh/h	4	2	0	7	7	7	2	65	6	10	37	15
Conflicting Peds, #/hr	7	0	9	9	0	7	29	0	7	7	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	20	0	29	0	6	0	20	16	0
Mvmt Flow	5	2	0	8	8	8	2	76	7	12	43	17
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	204	199	90	177	204	94	89	0	0	90	0	0
Stage 1	105	105	-	91	91	-	-	-	-	-	-	-
Stage 2	99	94	-	86	113	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.3	6.5	6.49	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.68	4	3.561	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	758	700	973	747	696	894	1519	-	-	1399	-	-
Stage 1	906	812	-	874	823	-	-	-	-	-	-	-
Stage 2	912	821	-	879	806	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	716	672	942	730	668	884	1482	-	-	1391	-	-
Mov Cap-2 Maneuver	716	672	-	730	668	-	-	-	-	-	-	-
Stage 1	883	785	-	868	817	-	-	-	-	-	-	-
Stage 2	888	815	-	862	779	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.2		10			0.2			1.2			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1482	-	-	701	750	1391	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.01	0.033	0.008	-	-				
HCM Control Delay (s)	7.4	0	-	10.2	10	7.6	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	5	7	1	0	7	0	264	6	35	307	18
Future Vol, veh/h	6	5	7	1	0	7	0	264	6	35	307	18
Conflicting Peds, #/hr	5	0	12	12	0	5	6	0	14	14	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	29	0	0	43	0	4	33	9	6	17
Mvmt Flow	7	6	8	1	0	8	0	297	7	39	345	20
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	749	757	373	767	764	320	371	0	0	318	0	0
Stage 1	439	439	-	315	315	-	-	-	-	-	-	-
Stage 2	310	318	-	452	449	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.1	6.5	6.63	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.5	4	3.687	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	331	339	617	322	336	635	1199	-	-	1204	-	-
Stage 1	601	582	-	700	659	-	-	-	-	-	-	-
Stage 2	705	657	-	591	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	314	320	608	297	317	625	1193	-	-	1190	-	-
Mov Cap-2 Maneuver	314	320	-	297	317	-	-	-	-	-	-	-
Stage 1	598	555	-	692	651	-	-	-	-	-	-	-
Stage 2	693	649	-	548	550	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.8		11.7		0		0.8					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1193	-	-	389	549	1190	-	-				
HCM Lane V/C Ratio	-	-	-	0.052	0.016	0.033	-	-				
HCM Control Delay (s)	0	-	-	14.8	11.7	8.1	0	-				
HCM Lane LOS	A	-	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	264	20	0	398	29	0	0	10	0	1	24
Future Vol, veh/h	31	264	20	0	398	29	0	0	10	0	1	24
Conflicting Peds, #/hr	2	0	11	11	0	2	6	0	8	8	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	16	3	0	0	5	0	0	0	0	0	0	4
Mvmt Flow	35	297	22	0	447	33	0	0	11	0	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	482	0	0	-	-	0	-	-	327	-	866	472
Stage 1	-	-	-	-	-	-	-	-	-	-	466	-
Stage 2	-	-	-	-	-	-	-	-	-	-	400	-
Critical Hdwy	4.26	-	-	-	-	-	-	-	6.2	-	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	5.5	-
Follow-up Hdwy	2.344	-	-	-	-	-	-	-	3.3	-	4	3.336
Pot Cap-1 Maneuver	1012	-	-	0	-	-	0	0	719	0	293	588
Stage 1	-	-	-	0	-	-	0	0	-	0	566	-
Stage 2	-	-	-	0	-	-	0	0	-	0	605	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1010	-	-	-	-	-	-	-	708	-	280	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	389	-
Stage 1	-	-	-	-	-	-	-	-	-	-	565	-
Stage 2	-	-	-	-	-	-	-	-	-	-	578	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0			10.2			11.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	708	1010	-	-	-	-	584
HCM Lane V/C Ratio	0.016	0.034	-	-	-	-	0.046
HCM Control Delay (s)	10.2	8.7	-	-	-	-	11.5
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	-	-	0.1

Ex_AM
5: Pacific Ave & Laurel St

Ex_AM
Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	261	14	22	350	21	26	24	25	12	30	16
Future Volume (veh/h)	9	261	14	22	350	21	26	24	25	12	30	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.89		0.84	0.89		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1856	1900	1900	1856	1337	1841	1707	1781	1900	1559	1441
Adj Flow Rate, veh/h	10	281	15	24	376	23	28	26	27	13	32	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	11	3	0	0	3	38	4	13	8	0	23	31
Cap, veh/h	28	820	44	73	853	52	317	131	136	80	151	69
Arrive On Green	0.02	0.47	0.47	0.04	0.49	0.49	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1654	1741	93	1810	1726	106	1188	695	722	166	804	366
Grp Volume(v), veh/h	10	0	296	24	0	399	28	0	53	62	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	1834	1810	0	1831	1188	0	1418	1336	0	0
Q Serve(g_s), s	0.5	0.0	9.2	1.2	0.0	12.7	0.0	0.0	2.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	9.2	1.2	0.0	12.7	1.3	0.0	2.8	3.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.06	1.00		0.51	0.21		0.27
Lane Grp Cap(c), veh/h	28	0	864	73	0	905	317	0	267	300	0	0
V/C Ratio(X)	0.35	0.00	0.34	0.33	0.00	0.44	0.09	0.00	0.20	0.21	0.00	0.00
Avail Cap(c_a), veh/h	199	0	864	217	0	905	411	0	378	401	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.95	0.00	0.95	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.7	0.0	15.0	42.0	0.0	14.7	30.2	0.0	30.8	31.0	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	1.1	0.9	0.0	1.5	0.1	0.0	0.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.9	0.5	0.0	5.4	0.5	0.0	1.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	0.0	16.1	43.0	0.0	16.2	30.3	0.0	31.2	31.4	0.0	0.0
LnGrp LOS	D	A	B	D	A	B	C	A	C	C	A	A
Approach Vol, veh/h		306			423			81			62	
Approach Delay, s/veh		17.1			17.7			30.9			31.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	49.1		20.9	7.8	47.0		20.9				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 11	42.4		24.0	* 11	42.4		24.0				
Max Q Clear Time (g_c+I1), s	2.5	14.7		5.3	3.2	11.2		4.8				
Green Ext Time (p_c), s	0.0	2.6		0.2	0.0	1.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			19.7									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	281	17	238	361	86	5	81	186	20	130	36
Future Volume (veh/h)	30	281	17	238	361	86	5	81	186	20	130	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1841	1885	1885	1885	1885	1900	1737	1856	1826	1767
Adj Flow Rate, veh/h	33	309	19	262	397	95	5	89	204	22	143	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	1	4	1	1	1	1	0	11	3	5	9
Cap, veh/h	89	1120	69	196	727	616	19	315	244	66	265	74
Arrive On Green	0.02	0.11	0.11	0.11	0.39	0.39	0.01	0.17	0.17	0.04	0.19	0.19
Sat Flow, veh/h	1781	3428	210	1795	1885	1598	1795	1900	1472	1767	1373	384
Grp Volume(v), veh/h	33	161	167	262	397	95	5	89	204	22	0	183
Grp Sat Flow(s),veh/h/ln	1781	1791	1847	1795	1885	1598	1795	1900	1472	1767	0	1757
Q Serve(g_s), s	1.6	7.4	7.5	9.8	14.8	3.5	0.2	3.7	12.1	1.1	0.0	8.4
Cycle Q Clear(g_c), s	1.6	7.4	7.5	9.8	14.8	3.5	0.2	3.7	12.1	1.1	0.0	8.4
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	89	585	603	196	727	616	19	315	244	66	0	339
V/C Ratio(X)	0.37	0.27	0.28	1.34	0.55	0.15	0.27	0.28	0.84	0.33	0.00	0.54
Avail Cap(c_a), veh/h	372	585	603	196	727	616	176	515	399	173	0	476
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.9	30.3	30.4	40.1	21.5	18.1	44.2	32.9	36.4	42.2	0.0	32.7
Incr Delay (d2), s/veh	0.9	1.1	1.1	180.5	2.6	0.5	2.8	0.5	7.9	1.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.6	3.7	14.1	6.8	1.3	0.1	1.7	4.8	0.5	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	31.5	31.5	220.6	24.1	18.5	47.0	33.3	44.3	43.3	0.0	34.1
LnGrp LOS	D	C	C	F	C	B	D	C	D	D	A	C
Approach Vol, veh/h	361		754			298			205			
Approach Delay, s/veh	32.6		91.7			41.1			35.0			
Approach LOS	C		F			D			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	39.3	5.1	22.0	14.0	34.0	7.6	19.5				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	19	20.4	* 8.8	24.4	* 9.8	29.4	* 8.8	24.4				
Max Q Clear Time (g_c+13.6), s	13.6	16.8	2.2	10.4	11.8	9.5	3.1	14.1				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.8	0.0	1.8	0.0	0.8				

Intersection Summary

HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 8
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	131	1	5	131	0	7	1	13	23	5	9
Future Vol, veh/h	0	131	1	5	131	0	7	1	13	23	5	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	9	0	0
Mvmt Flow	0	141	1	5	141	0	8	1	14	25	5	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8	8.1	7.5	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	33%	0%	4%	82%	0%
Vol Thru, %	5%	99%	96%	18%	0%
Vol Right, %	62%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	132	136	28	9
LT Vol	7	0	5	23	0
Through Vol	1	131	131	5	0
RT Vol	13	1	0	0	9
Lane Flow Rate	23	142	146	30	10
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.027	0.163	0.167	0.048	0.012
Departure Headway (Hd)	4.384	4.132	4.123	5.719	4.448
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	821	854	855	630	810
Service Time	2.385	2.225	2.216	3.42	2.148
HCM Lane V/C Ratio	0.028	0.166	0.171	0.048	0.012
HCM Control Delay	7.5	8	8.1	8.7	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.6	0.6	0.2	0

SITE LAYOUT

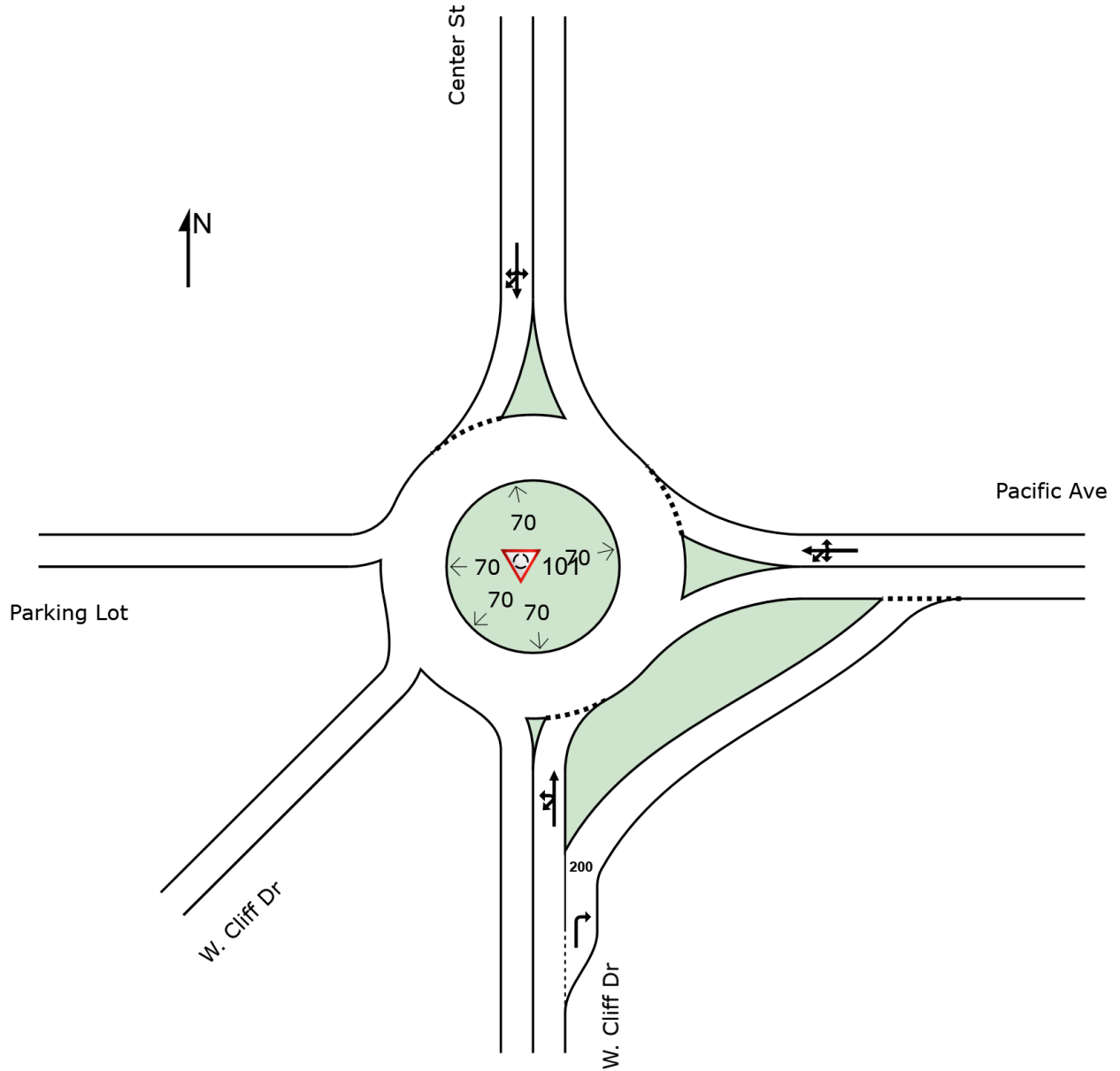
 Site: 101 [INT #9 Ex_AM (Site Folder: Existing Conditions)]

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 Site: 101 [INT #9 Ex_AM (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh Dist]	[Veh ft]				
South: W. Cliff Dr															
Lane 1 ^d	115	3.0	115	3.0	1361	0.084	100	3.2	LOS A	0.3	8.8	Full	1600	0.0	0.0
Lane 2	279	3.0	279	3.0	1323	0.211	100	4.1	LOS A	1.1	27.8	Short	200	0.0	NA
Approach	394	3.0	394	3.0		0.211		3.8	LOS A	1.1	27.8				
East: Pacific Ave															
Lane 1 ^d	372	3.0	372	3.0	1186	0.313	100	5.9	LOS A	1.7	44.4	Full	1600	0.0	0.0
Approach	372	3.0	372	3.0		0.313		5.9	LOS A	1.7	44.4				
North: Center St															
Lane 1 ^d	148	3.0	148	3.0	904	0.164	100	5.6	LOS A	0.7	18.0	Full	1600	0.0	0.0
Approach	148	3.0	148	3.0		0.164		5.6	LOS A	0.7	18.0				
All Vehicles	914	3.0	914	3.0		0.313		4.9	LOS A	1.7	44.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: W. Cliff Dr												
Mov.	L3	L2	T1	R2	Total	%HV						
From S							Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	SW	W	N	E			veh/h	Satn	Util.	SL	Ov.	Lane
								v/c	%	%		No.
Lane 1	20	1	94	-	115	3.0	1361	0.084	100	NA	NA	
Lane 2	-	-	-	279	279	3.0	1323	0.211	100	0.0	1	
Approach	20	1	94	279	394	3.0		0.211				
East: Pacific Ave												
Mov.	L2	L1	T1	R2	Total	%HV						
From E							Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	S	SW	W	N			veh/h	Satn	Util.	SL	Ov.	Lane
								v/c	%	%		No.
Lane 1	55	288	1	27	372	3.0	1186	0.313	100	NA	NA	
Approach	55	288	1	27	372	3.0		0.313				
North: Center St												
Mov.	L2	T1	R1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	

From N To Exit:	E	S	SW	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	14	35	99	1	148	3.0	904	0.164	100	NA	NA
Approach	14	35	99	1	148	3.0		0.164			
Total %HV Deg. Satn (v/c)											
All Vehicles	914	3.0		0.313							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	272	31	344	376	24	163
Future Volume (vph)	272	31	344	376	24	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3489		1805	3574	1787	1599
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3489		1805	3574	1787	1599
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	309	35	391	427	27	185
RTOR Reduction (vph)	6	0	0	0	0	167
Lane Group Flow (vph)	338	0	391	427	27	18
Confl. Peds. (#/hr)		26	26			
Heavy Vehicles (%)	1%	1%	0%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1 3 9	1 2 3 9	4	
Permitted Phases						4
Actuated Green, G (s)	16.5		59.9	84.4	10.0	10.0
Effective Green, g (s)	16.5		59.9	84.4	10.0	10.0
Actuated g/C Ratio	0.16		0.58	0.82	0.10	0.10
Clearance Time (s)	4.0				4.0	4.0
Vehicle Extension (s)	3.0				3.0	3.0
Lane Grp Cap (vph)	562		1055	2945	174	156
v/s Ratio Prot	c0.10		c0.22	0.12	c0.02	
v/s Ratio Perm						0.01
v/c Ratio	0.60		0.37	0.14	0.16	0.12
Uniform Delay, d1	39.9		11.3	1.8	42.3	42.2
Progression Factor	1.00		0.26	0.09	1.00	1.00
Incremental Delay, d2	1.8		0.1	0.0	0.4	0.3
Delay (s)	41.7		3.0	0.2	42.7	42.5
Level of Service	D		A	A	D	D
Approach Delay (s)	41.7			1.5	42.5	
Approach LOS	D			A	D	
Intersection Summary						
HCM 2000 Control Delay			17.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.41			
Actuated Cycle Length (s)			102.4		Sum of lost time (s)	20.0
Intersection Capacity Utilization			45.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Ex_AM

11: Front St/Pacific Ave & Mission St/Water St

Ex_AM

Timing Plan: AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	322	58	136	660	4	0	0	0	3	36	84
Future Volume (vph)	61	322	58	136	660	4	0	0	0	3	36	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95						1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00						1.00	0.93
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.98		1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)	1752	3392		3303	3535						1572	1472
Flt Permitted	0.95	1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)	1752	3392		3303	3535						1572	1472
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	67	354	64	149	725	4	0	0	0	3	40	92
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	0	79
Lane Group Flow (vph)	67	407	0	149	729	0	0	0	0	0	43	13
Confl. Peds. (#/hr)	13		19	19		13	25		33	33		25
Confl. Bikes (#/hr)			5			24						3
Heavy Vehicles (%)	3%	3%	5%	6%	2%	0%	0%	0%	0%	0%	22%	2%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	4 5	4 5 6		9	6 9					3	3	
Permitted Phases												3
Actuated Green, G (s)	26.5	47.1		25.3	45.9						14.0	14.0
Effective Green, g (s)	26.5	47.1		25.3	45.9						14.0	14.0
Actuated g/C Ratio	0.26	0.46		0.25	0.45						0.14	0.14
Clearance Time (s)				4.0							4.0	4.0
Vehicle Extension (s)				3.0							2.0	2.0
Lane Grp Cap (vph)	453	1560		816	1584						214	201
v/s Ratio Prot	0.04	c0.12		0.05	c0.21						c0.03	
v/s Ratio Perm												0.01
v/c Ratio	0.15	0.26		0.18	0.46						0.20	0.06
Uniform Delay, d1	29.2	17.0		30.4	19.6						39.2	38.5
Progression Factor	0.36	0.37		1.00	1.00						1.00	1.00
Incremental Delay, d2	0.1	0.1		0.1	0.2						0.2	0.0
Delay (s)	10.6	6.3		30.5	19.9						39.4	38.5
Level of Service	B	A		C	B						D	D
Approach Delay (s)		6.9			21.7			0.0			38.8	
Approach LOS		A			C			A			D	

Intersection Summary

HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	102.4	Sum of lost time (s)	20.0
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	290	21	197	688	193	29	148	98	59	67	4
Future Volume (veh/h)	25	290	21	197	688	193	29	148	98	59	67	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1885	1885	1885	1885	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	27	315	23	214	748	210	32	161	0	64	73	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	1	0	1	1	1	1	1	1	1	1	0
Cap, veh/h	49	1955	860	250	2358	1005	54	360		82	206	11
Arrive On Green	0.03	0.55	0.55	0.14	0.66	0.66	0.03	0.10	0.00	0.05	0.12	0.12
Sat Flow, veh/h	1810	3582	1575	1795	3582	1527	1795	3582	1598	1795	1766	97
Grp Volume(v), veh/h	27	315	23	214	748	210	32	161	0	64	0	77
Grp Sat Flow(s),veh/h/ln	1810	1791	1575	1795	1791	1527	1795	1791	1598	1795	0	1863
Q Serve(g_s), s	1.4	4.2	0.6	11.1	8.6	5.2	1.7	4.0	0.0	3.4	0.0	3.6
Cycle Q Clear(g_c), s	1.4	4.2	0.6	11.1	8.6	5.2	1.7	4.0	0.0	3.4	0.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	49	1955	860	250	2358	1005	54	360		82	0	217
V/C Ratio(X)	0.56	0.16	0.03	0.86	0.32	0.21	0.59	0.45		0.78	0.00	0.35
Avail Cap(c_a), veh/h	152	1955	860	454	2358	1005	170	1093		113	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.7	10.7	9.9	39.9	7.0	6.4	45.5	40.2	0.0	44.8	0.0	38.7
Incr Delay (d2), s/veh	3.6	0.2	0.1	3.2	0.4	0.5	3.8	0.9	0.0	13.3	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.6	0.2	5.0	3.0	1.6	0.8	1.8	0.0	1.8	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	10.9	10.0	43.2	7.4	6.9	49.3	41.1	0.0	58.1	0.0	39.7
LnGrp LOS	D	B	B	D	A	A	D	D		E	A	D
Approach Vol, veh/h	365			1172			193			141		
Approach Delay, s/veh	13.7			13.8			42.5			48.0		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	55.8	8.4	13.6	6.5	66.5	6.9	15.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	24.0	20.0	6.0	29.0	8.0	36.0	9.0	26.0				
Max Q Clear Time (g_c+I1), s	11.3	6.2	5.4	6.0	3.4	10.6	3.7	5.6				
Green Ext Time (p_c), s	0.2	1.7	0.0	0.9	0.0	6.5	0.0	0.3				

Intersection Summary

HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	266	77	114	528	167	108	441	36	171	628	377
Future Volume (veh/h)	178	266	77	114	528	167	108	441	36	171	628	377
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	193	289	0	124	574	0	117	479	39	186	683	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1	1	1	1
Cap, veh/h	268	736		154	766		146	1193	520	261	1169	
Arrive On Green	0.08	0.21	0.00	0.09	0.21	0.00	0.08	0.33	0.33	0.07	0.33	0.00
Sat Flow, veh/h	3483	3582	1610	1810	3582	1598	1795	3582	1562	3483	3582	1598
Grp Volume(v), veh/h	193	289	0	124	574	0	117	479	39	186	683	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1610	1810	1791	1598	1795	1791	1562	1742	1791	1598
Q Serve(g_s), s	5.1	6.6	0.0	6.4	14.3	0.0	6.1	9.8	1.6	5.0	15.1	0.0
Cycle Q Clear(g_c), s	5.1	6.6	0.0	6.4	14.3	0.0	6.1	9.8	1.6	5.0	15.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	736		154	766		146	1193	520	261	1169	
V/C Ratio(X)	0.72	0.39		0.80	0.75		0.80	0.40	0.07	0.71	0.58	
Avail Cap(c_a), veh/h	403	980		210	980		208	1193	520	550	1169	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.8	32.6	0.0	42.7	35.0	0.0	42.9	24.4	21.7	43.0	26.6	0.0
Incr Delay (d2), s/veh	3.6	0.3	0.0	10.6	2.4	0.0	8.7	1.0	0.3	1.4	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.9	0.0	3.3	6.4	0.0	3.0	4.2	0.6	2.2	6.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	33.0	0.0	53.2	37.4	0.0	51.6	25.4	21.9	44.3	28.8	0.0
LnGrp LOS	D	C		D	D		D	C	C	D	C	
Approach Vol, veh/h	482			698			635			869		
Approach Delay, s/veh	38.4			40.2			30.0			32.1		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.5	23.5	11.7	35.0	11.3	24.3	11.1	35.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	1.0	26.0	11.0	31.0	11.0	26.0	15.0	27.0				
Max Q Clear Time (g_c+1/3), s	1.0	8.6	8.1	17.1	7.1	16.3	7.0	11.8				
Green Ext Time (p_c), s	0.0	1.6	0.0	4.0	0.2	2.7	0.2	2.9				

Intersection Summary

HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↕↗		↖↗		↖	↖↗		↖
Traffic Volume (veh/h)	3	1	9	27	1	23	12	746	13	61	1274	8
Future Volume (veh/h)	3	1	9	27	1	23	12	746	13	61	1274	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.97	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1885	1900	1885	1885
Adj Flow Rate, veh/h	3	1	9	28	1	24	13	785	14	64	1341	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	0	1	1
Cap, veh/h	63	31	107	206	6	149	28	2518	1091	133	2727	1181
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.70	0.70	0.07	0.76	0.76
Sat Flow, veh/h	174	315	1100	1359	63	1534	1810	3582	1551	1810	3582	1552
Grp Volume(v), veh/h	13	0	0	29	0	24	13	785	14	64	1341	8
Grp Sat Flow(s),veh/h/ln	1588	0	0	1422	0	1534	1810	1791	1551	1810	1791	1552
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	1.4	0.7	7.9	0.3	3.2	13.6	0.1
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.6	0.0	1.4	0.7	7.9	0.3	3.2	13.6	0.1
Prop In Lane	0.23		0.69	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	0	0	212	0	149	28	2518	1091	133	2727	1181
V/C Ratio(X)	0.06	0.00	0.00	0.14	0.00	0.16	0.47	0.31	0.01	0.48	0.49	0.01
Avail Cap(c_a), veh/h	487	0	0	473	0	436	152	2518	1091	210	2727	1181
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	0.0	39.4	0.0	39.3	46.4	5.4	4.2	42.3	4.3	2.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.2	4.5	0.3	0.0	2.7	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.6	0.0	0.5	0.3	2.6	0.1	1.5	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	0.0	39.5	0.0	39.5	50.9	5.7	4.3	44.9	5.0	2.7
LnGrp LOS	D	A	A	D	A	D	D	A	A	D	A	A
Approach Vol, veh/h												
13												
Approach Delay, s/veh												
39.1												
Approach LOS												
D												
Timer - Assigned Phs												
234678												
Phs Duration (G+Y+Rc), s												
13.25.576.313.211.070.8												
Change Period (Y+Rc), s												
4.04.04.04.04.04.0												
Max Green Setting (Gmax), s												
27.08.048.027.011.045.0												
Max Q Clear Time (g_c+I1), s												
2.72.715.63.65.29.9												
Green Ext Time (p_c), s												
0.00.013.10.10.06.5												
Intersection Summary												
HCM 6th Ctrl Delay												
7.6												
HCM 6th LOS												
A												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩	↩	↩		↩	↩	↩	↩	↩	↩
Traffic Volume (veh/h)	14	340	292	49	97	29	176	332	269	25	925	163
Future Volume (veh/h)	14	340	292	49	97	29	176	332	269	25	925	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	14	347	0	50	99	30	180	339	0	26	944	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	0	1	1	1	1	1	1
Cap, veh/h	73	517		362	386	117	232	1743		42	1364	
Arrive On Green	0.28	0.28	0.00	0.28	0.28	0.28	0.13	0.49	0.00	0.02	0.38	0.00
Sat Flow, veh/h	28	1844	1598	1037	1377	417	1795	3582	1598	1795	3676	0
Grp Volume(v), veh/h	361	0	0	50	0	129	180	339	0	26	944	0
Grp Sat Flow(s), veh/h/ln	1872	0	1598	1037	0	1794	1795	1791	1598	1795	1791	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.2	5.6	3.1	0.0	0.8	12.7	0.0
Cycle Q Clear(g_c), s	9.8	0.0	0.0	3.1	0.0	3.2	5.6	3.1	0.0	0.8	12.7	0.0
Prop In Lane	0.04		1.00	1.00		0.23	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	590	0		362	0	503	232	1743		42	1364	
V/C Ratio(X)	0.61	0.00		0.14	0.00	0.26	0.78	0.19		0.61	0.69	
Avail Cap(c_a), veh/h	1039	0		613	0	939	501	2998		157	2311	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.4	0.0	0.0	16.0	0.0	16.0	24.2	8.4	0.0	27.7	14.9	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.2	0.0	0.3	5.5	0.1	0.0	13.4	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.0	0.0	0.0	0.5	0.0	1.2	2.6	1.0	0.0	0.5	4.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	0.0	0.0	16.1	0.0	16.3	29.7	8.4	0.0	41.2	15.6	0.0
LnGrp LOS	B	A		B	A	B	C	A		D	B	
Approach Vol, veh/h	361		179				519				970	
Approach Delay, s/veh	19.4		16.2				15.8				16.2	
Approach LOS	B		B				B				B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	31.9		20.1	11.4	25.8		20.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	48.0		30.0	16.0	37.0		30.0				
Max Q Clear Time (g_c+12, s)	12.8	5.1		11.8	7.6	14.7		5.2				
Green Ext Time (p_c), s	0.0	2.5		2.0	0.3	7.1		0.9				

Intersection Summary

HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	67	7	184	72	51	10	863	136	57	1027	22
Future Volume (veh/h)	31	67	7	184	72	51	10	863	136	57	1027	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1811	1900	1900	1841	1885	1841	1900	1811	1781	1841	1811	1900
Adj Flow Rate, veh/h	33	71	7	194	76	54	11	908	143	60	1081	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	0	0	4	1	4	0	6	8	4	6	0
Cap, veh/h	68	158	16	222	182	129	37	1705	269	102	2104	45
Arrive On Green	0.04	0.09	0.09	0.13	0.18	0.18	0.02	0.57	0.57	0.06	0.61	0.61
Sat Flow, veh/h	1725	1695	167	1753	1010	718	1810	2975	469	1753	3445	73
Grp Volume(v), veh/h	33	0	78	194	0	130	11	525	526	60	540	564
Grp Sat Flow(s),veh/h/ln	1725	0	1862	1753	0	1727	1810	1721	1723	1753	1721	1797
Q Serve(g_s), s	2.2	0.0	4.7	12.8	0.0	7.9	0.7	22.1	22.1	3.9	21.0	21.0
Cycle Q Clear(g_c), s	2.2	0.0	4.7	12.8	0.0	7.9	0.7	22.1	22.1	3.9	21.0	21.0
Prop In Lane	1.00		0.09	1.00		0.42	1.00		0.27	1.00		0.04
Lane Grp Cap(c), veh/h	68	0	173	222	0	311	37	986	988	102	1051	1098
V/C Ratio(X)	0.49	0.00	0.45	0.88	0.00	0.42	0.30	0.53	0.53	0.59	0.51	0.51
Avail Cap(c_a), veh/h	395	0	410	267	0	311	230	986	988	238	1051	1098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	0.0	50.7	50.6	0.0	42.9	56.9	15.5	15.5	54.2	13.0	13.0
Incr Delay (d2), s/veh	4.0	0.0	2.6	22.0	0.0	1.3	3.2	2.1	2.1	5.3	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	2.3	7.0	0.0	3.5	0.4	8.9	9.0	1.9	8.3	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	0.0	53.3	72.7	0.0	44.1	60.2	17.5	17.5	59.4	14.8	14.7
LnGrp LOS	E	A	D	E	A	D	E	B	B	E	B	B
Approach Vol, veh/h	111		324				1062			1164		
Approach Delay, s/veh	55.1		61.2				18.0			17.1		
Approach LOS	E		E				B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	72.2	19.1	15.6	6.6	76.7	8.8	25.9				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	16	36.0	* 18	* 26	* 15	35.0	* 27	21.0				
Max Q Clear Time (g_c+15, s)	15.9	24.1	14.8	6.7	2.7	23.0	4.2	9.9				
Green Ext Time (p_c), s	0.1	6.9	0.1	0.4	0.0	7.2	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	174	58	100	237	67	30	188	110	23	67	35
Future Volume (veh/h)	32	174	58	100	237	67	30	188	110	23	67	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	0.98		0.85	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1811	1870	1870	1841	1900	1856	1885	1826	1900	1856	1856
Adj Flow Rate, veh/h	39	210	70	120	286	81	36	227	133	28	81	42
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	6	2	2	4	0	3	1	5	0	3	3
Cap, veh/h	93	358	119	229	486	138	138	458	357	146	277	122
Arrive On Green	0.05	0.28	0.28	0.13	0.36	0.36	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1767	1280	427	1781	1365	387	133	1684	1313	146	1020	449
Grp Volume(v), veh/h	39	0	280	120	0	367	263	0	133	151	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1707	1781	0	1751	1817	0	1313	1614	0	0
Q Serve(g_s), s	0.9	0.0	5.7	2.5	0.0	6.8	0.0	0.0	3.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	5.7	2.5	0.0	6.8	4.7	0.0	3.3	2.8	0.0	0.0
Prop In Lane	1.00		0.25	1.00		0.22	0.14		1.00	0.19		0.28
Lane Grp Cap(c), veh/h	93	0	478	229	0	623	596	0	357	546	0	0
V/C Ratio(X)	0.42	0.00	0.59	0.52	0.00	0.59	0.44	0.00	0.37	0.28	0.00	0.00
Avail Cap(c_a), veh/h	794	0	1279	800	0	1312	1437	0	984	888	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.4	0.0	12.4	16.3	0.0	10.5	12.3	0.0	11.8	11.6	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	1.1	0.7	0.0	0.9	0.5	0.0	0.6	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	0.9	0.0	2.2	1.7	0.0	0.8	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	0.0	13.6	17.0	0.0	11.4	12.9	0.0	12.5	11.9	0.0	0.0
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	A
Approach Vol, veh/h	319		487			396			151			
Approach Delay, s/veh	14.3		12.8			12.7			11.9			
Approach LOS	B		B			B			B			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.4	15.2	15.5		6.3	18.3	15.5					
Change Period (Y+Rc), s	4.2	4.0	* 4.6		* 4.2	4.0	4.6					
Max Green Setting (Gmax), s	18	30.0	* 20		* 18	30.0	30.0					
Max Q Clear Time (g_c+14), s	14.5	7.7	4.8		2.9	8.8	6.7					
Green Ext Time (p_c), s	0.1	1.7	0.7		0.0	2.3	2.1					
Intersection Summary												
HCM 6th Ctrl Delay			13.0									
HCM 6th LOS			B									
Notes												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	263	7	16	312	68	21	56	17	85	20	31
Future Volume (veh/h)	43	263	7	16	312	68	21	56	17	85	20	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1826	1900	1693	1856	1752	1900	1870	1722	1870	1826	1900
Adj Flow Rate, veh/h	44	271	7	16	322	70	22	58	18	88	21	32
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	5	5	0	14	3	10	0	2	12	2	5	0
Cap, veh/h	90	502	422	41	363	79	51	107	370	72	10	407
Arrive On Green	0.05	0.28	0.28	0.05	0.50	0.50	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1739	1826	1532	1612	1457	317	0	402	1386	0	36	1527
Grp Volume(v), veh/h	44	271	7	16	0	392	80	0	18	109	0	32
Grp Sat Flow(s), veh/h/ln	1739	1826	1532	1612	0	1773	402	0	1386	36	0	1527
Q Serve(g_s), s	2.2	11.4	0.3	0.9	0.0	17.9	0.0	0.0	0.9	0.0	0.0	1.4
Cycle Q Clear(g_c), s	2.2	11.4	0.3	0.9	0.0	17.9	24.0	0.0	0.9	24.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		0.18	0.27		1.00	0.81		1.00
Lane Grp Cap(c), veh/h	90	502	422	41	0	441	158	0	370	82	0	407
V/C Ratio(X)	0.49	0.54	0.02	0.39	0.00	0.89	0.51	0.00	0.05	1.33	0.00	0.08
Avail Cap(c_a), veh/h	232	872	732	197	0	828	158	0	370	82	0	407
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.00	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	27.8	23.8	42.0	0.0	21.5	27.3	0.0	24.5	42.2	0.0	24.7
Incr Delay (d2), s/veh	1.5	0.9	0.0	2.1	0.0	21.7	2.6	0.0	0.1	210.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.0	0.1	0.4	0.0	7.6	1.4	0.0	0.3	6.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	28.7	23.8	44.1	0.0	43.2	29.8	0.0	24.6	252.9	0.0	24.8
LnGrp LOS	D	C	C	D	A	D	C	A	C	F	A	C
Approach Vol, veh/h	322			408			98			141		
Approach Delay, s/veh	30.5			43.2			28.9			201.1		
Approach LOS	C			D			C			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	28.8		28.0	8.7	26.4		28.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	43.0			24.0	12.0	42.0		24.0				
Max Q Clear Time (g_c+12), s	13.4			26.0	4.2	19.9		26.0				
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	2.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	60.5											
HCM 6th LOS	E											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	258	38	35	340	23	36	69	14	18	76	10
Future Volume (veh/h)	13	258	38	35	340	23	36	69	14	18	76	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1781	1826	1826	1856	1841	1900	1900	1885	1796	1737	1885	1900
Adj Flow Rate, veh/h	14	272	40	37	358	24	38	73	15	19	80	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	5	5	3	4	0	0	1	7	11	1	0
Cap, veh/h	22	780	115	47	881	59	322	340	70	303	365	50
Arrive On Green	0.01	0.50	0.50	0.03	0.52	0.52	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1697	1545	227	1767	1701	114	1301	1501	308	1192	1610	221
Grp Volume(v), veh/h	14	0	312	37	0	382	38	0	88	19	0	91
Grp Sat Flow(s), veh/h/ln	1697	0	1773	1767	0	1815	1301	0	1810	1192	0	1832
Q Serve(g_s), s	0.7	0.0	9.5	1.9	0.0	11.6	2.2	0.0	3.6	1.2	0.0	3.6
Cycle Q Clear(g_c), s	0.7	0.0	9.5	1.9	0.0	11.6	5.8	0.0	3.6	4.7	0.0	3.6
Prop In Lane	1.00		0.13	1.00		0.06	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	22	0	894	47	0	940	322	0	410	303	0	415
V/C Ratio(X)	0.63	0.00	0.35	0.78	0.00	0.41	0.12	0.00	0.21	0.06	0.00	0.22
Avail Cap(c_a), veh/h	204	0	894	212	0	940	322	0	410	303	0	415
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.2	0.0	13.4	43.5	0.0	13.2	30.7	0.0	28.3	30.2	0.0	28.3
Incr Delay (d2), s/veh	10.2	0.0	1.1	9.9	0.0	1.3	0.7	0.0	1.2	0.4	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	0.0	3.9	0.9	0.0	4.8	0.7	0.0	1.7	0.4	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.4	0.0	14.5	53.4	0.0	14.5	31.4	0.0	29.5	30.6	0.0	29.5
LnGrp LOS	D	A	B	D	A	B	C	A	C	C	A	C
Approach Vol, veh/h	326			419			126			110		
Approach Delay, s/veh	16.2			18.0			30.1			29.7		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	50.0		25.3	5.4	51.2		25.3				
Change Period (Y+Rc), s	4.2	4.6		4.9	* 4.2	4.6		* 4.9				
Max Green Setting (Gmax), s	15	45.4		20.1	* 11	45.4		* 20				
Max Q Clear Time (g_c+13), s	11.5	11.5		7.8	2.7	13.6		6.7				
Green Ext Time (p_c), s	0.0	3.0		0.2	0.0	3.7		0.2				

Intersection Summary

HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (veh/h)	321	19	298	165	0	355
Future Volume (veh/h)	321	19	298	165	0	355
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1856	1900	1826	1870	0	1841
Adj Flow Rate, veh/h	345	0	320	0	0	382
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	5	2	0	4
Cap, veh/h	386		1012		0	1938
Arrive On Green	0.22	0.00	0.55	0.00	0.00	0.55
Sat Flow, veh/h	1767	1610	1826	1585	0	3681
Grp Volume(v), veh/h	345	0	320	0	0	382
Grp Sat Flow(s),veh/h/ln	1767	1610	1826	1585	0	1749
Q Serve(g_s), s	19.0	0.0	9.5	0.0	0.0	5.5
Cycle Q Clear(g_c), s	19.0	0.0	9.5	0.0	0.0	5.5
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	386		1012		0	1938
V/C Ratio(X)	0.89		0.32		0.00	0.20
Avail Cap(c_a), veh/h	626		1012		0	1938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.95	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	0.0	12.1	0.0	0.0	11.2
Incr Delay (d2), s/veh	9.6	0.0	0.8	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.9	0.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.5	0.0	12.8	0.0	0.0	11.4
LnGrp LOS	D		B		A	B
Approach Vol, veh/h	345		320			382
Approach Delay, s/veh	47.5		12.8			11.4
Approach LOS	D		B			B
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	60.0				60.0	26.5
Change Period (Y+Rc), s	4.6				4.6	4.6
Max Green Setting (Gmax), s	18.4				55.4	35.4
Max Q Clear Time (g_c+I1), s	11.5				7.5	21.0
Green Ext Time (p_c), s	1.0				2.8	0.9
Intersection Summary						
HCM 6th Ctrl Delay			23.7			
HCM 6th LOS			C			

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Ex_AM
21: Ocean St & Broadway

Ex_AM
Timing Plan: AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	216	13	64	227	75	5	310	69	33	251	149
Future Volume (veh/h)	171	216	13	64	227	75	5	310	69	33	251	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	0.99		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1841	1678	1900	1856	1841	1900	1841	1900	1856	1811	1841
Adj Flow Rate, veh/h	178	225	14	67	236	78	5	323	72	34	261	155
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	4	15	0	3	4	0	4	0	3	6	4
Cap, veh/h	215	490	30	87	280	93	47	1834	838	137	994	567
Arrive On Green	0.12	0.29	0.29	0.05	0.21	0.21	0.54	0.54	0.54	1.00	1.00	1.00
Sat Flow, veh/h	1767	1711	106	1810	1316	435	15	3402	1555	173	1844	1051
Grp Volume(v), veh/h	178	0	239	67	0	314	176	152	72	241	0	209
Grp Sat Flow(s), veh/h/ln	1767	0	1817	1810	0	1751	1826	1591	1555	1655	0	1414
Q Serve(g_s), s	9.3	0.0	10.3	3.5	0.0	16.3	0.0	4.6	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	0.0	10.3	3.5	0.0	16.3	4.6	4.6	2.1	0.0	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.25	0.03		1.00	0.14		0.74
Lane Grp Cap(c), veh/h	215	0	520	87	0	373	1024	858	838	935	0	762
V/C Ratio(X)	0.83	0.00	0.46	0.77	0.00	0.84	0.17	0.18	0.09	0.26	0.00	0.27
Avail Cap(c_a), veh/h	298	0	880	190	0	737	1024	858	838	935	0	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.00	0.96
Uniform Delay (d), s/veh	40.8	0.0	27.9	44.7	0.0	35.8	11.2	11.2	10.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	12.9	0.0	0.6	13.2	0.0	5.2	0.4	0.5	0.2	0.6	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.8	0.0	4.5	1.9	0.0	7.4	1.9	1.7	0.7	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	53.7	0.0	28.5	57.8	0.0	41.0	11.5	11.6	10.8	0.6	0.0	0.9
LnGrp LOS	D	A	C	E	A	D	B	B	B	A	A	A
Approach Vol, veh/h	417			381			400			450		
Approach Delay, s/veh	39.2			44.0			11.4			0.7		
Approach LOS	D			D			B			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	31.2		55.2	15.5	24.2		55.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	40.0	46.0		27.0	16.0	40.0		27.0				
Max Q Clear Time (g_c+15), s	15.5	12.3		6.6	11.3	18.3		2.0				
Green Ext Time (p_c), s	0.0	1.5		2.1	0.2	1.9		3.0				

Intersection Summary

HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Ex_AM
22: Riverside Ave/Dakota Ave & Soquel Ave

Ex_AM
Timing Plan: AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (veh/h)	9	160	0	2	296	4	21	7	22	4	1	22
Future Volume (veh/h)	9	160	0	2	296	4	21	7	22	4	1	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.96	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1722	1900	1900	1796	1900	1900	1693	1826	1900	1900	1900
Adj Flow Rate, veh/h	10	180	0	2	333	4	24	8	25	4	1	25
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	12	0	0	7	0	0	14	5	0	0	0
Cap, veh/h	112	1888	0	42	2116	25	195	73	165	77	40	358
Arrive On Green	0.63	0.63	0.00	0.63	0.63	0.63	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	109	3092	0	3	3377	40	509	268	607	116	148	1322
Grp Volume(v), veh/h	101	89	0	178	0	161	57	0	0	30	0	0
Grp Sat Flow(s),veh/h/ln	1634	1489	0	1795	0	1625	1385	0	0	1587	0	0
Q Serve(g_s), s	0.0	2.1	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.1	2.1	0.0	3.7	0.0	3.7	2.5	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.10		0.00	0.01		0.02	0.42		0.44	0.13		0.83
Lane Grp Cap(c), veh/h	1068	933	0	1165	0	1019	432	0	0	475	0	0
V/C Ratio(X)	0.09	0.10	0.00	0.15	0.00	0.16	0.13	0.00	0.00	0.06	0.00	0.00
Avail Cap(c_a), veh/h	1068	933	0	1165	0	1019	432	0	0	475	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.99	0.00	0.99	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	6.7	0.0	7.0	0.0	7.0	24.8	0.0	0.0	24.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.3	0.0	0.3	0.6	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	0.0	1.4	0.0	1.2	1.0	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	6.9	0.0	7.2	0.0	7.3	25.5	0.0	0.0	24.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h	190		339			57			30			
Approach Delay, s/veh	6.9		7.3			25.5			24.6			
Approach LOS	A		A			C			C			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	61.0		29.0			61.0			29.0			
Change Period (Y+Rc), s	4.6		4.6			4.6			4.6			
Max Green Setting (Gmax), s	56.4		24.4			30.4			24.4			
Max Q Clear Time (g_c+I1), s	4.1		4.5			5.7			3.2			
Green Ext Time (p_c), s	1.2		0.2			2.0			0.1			
Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	113	34	77	160	89	48	421	96	128	367	125
Future Volume (veh/h)	40	113	34	77	160	89	48	421	96	128	367	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1885	1885	1900	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	43	120	36	82	170	95	51	448	102	136	390	133
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	1	1	0	1	0	1	1	1
Cap, veh/h	64	715	205	106	1024	435	70	1282	570	167	1475	643
Arrive On Green	0.04	0.26	0.26	0.06	0.29	0.29	0.08	0.72	0.72	0.09	0.41	0.41
Sat Flow, veh/h	1795	2716	778	1810	3582	1520	1810	3582	1593	1795	3582	1563
Grp Volume(v), veh/h	43	77	79	82	170	95	51	448	102	136	390	133
Grp Sat Flow(s),veh/h/ln	1795	1791	1703	1810	1791	1520	1810	1791	1593	1795	1791	1563
Q Serve(g_s), s	2.2	3.2	3.4	4.2	3.4	4.5	2.6	4.5	2.0	7.1	6.8	5.2
Cycle Q Clear(g_c), s	2.2	3.2	3.4	4.2	3.4	4.5	2.6	4.5	2.0	7.1	6.8	5.2
Prop In Lane	1.00		0.46	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	471	448	106	1024	435	70	1282	570	167	1475	643
V/C Ratio(X)	0.67	0.16	0.18	0.77	0.17	0.22	0.72	0.35	0.18	0.82	0.26	0.21
Avail Cap(c_a), veh/h	170	471	448	210	1024	435	305	1282	570	170	1475	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	27.0	27.0	44.1	25.4	25.8	43.3	9.3	9.0	42.3	18.4	18.0
Incr Delay (d2), s/veh	4.5	0.7	0.9	4.3	0.3	1.1	4.8	0.7	0.6	23.6	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.4	1.5	2.0	1.5	1.7	1.2	1.6	0.8	4.2	2.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	27.7	27.9	48.4	25.8	26.9	48.1	10.0	9.6	65.9	18.9	18.7
LnGrp LOS	D	C	C	D	C	C	D	B	A	E	B	B
Approach Vol, veh/h	199				347				601		659	
Approach Delay, s/veh	32.5				31.4				13.2		28.6	
Approach LOS	C				C				B		C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	29.0	12.8	38.0	7.4	31.2	7.7	43.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	1.0	25.0	9.0	34.0	9.0	27.0	16.0	27.0				
Max Q Clear Time (g_c+10), s	1.0	5.4	9.1	6.5	4.2	6.5	4.6	8.8				
Green Ext Time (p_c), s	0.0	0.8	0.0	3.5	0.0	1.3	0.0	2.8				
Intersection Summary												
HCM 6th Ctrl Delay			24.4									
HCM 6th LOS			C									

Ex_AM
24: Branciforte Ave & Soquel Ave

Ex_AM
Timing Plan: AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔↔			↔↔			↔↔			↔	↗	
Traffic Volume (veh/h)	59	232	25	47	305	11	35	100	47	24	89	65	
Future Volume (veh/h)	59	232	25	47	305	11	35	100	47	24	89	65	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.93	0.99		0.96	0.99		0.96	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1781	1900	1870	1856	1633	1900	1900	1841	1781	1870	1900	
Adj Flow Rate, veh/h	65	255	27	52	335	12	38	110	52	26	98	71	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Percent Heavy Veh, %	5	8	0	2	3	18	0	0	4	8	2	0	
Cap, veh/h	236	968	107	145	980	37	82	158	67	87	253	253	
Arrive On Green	0.38	0.38	0.38	0.32	0.32	0.32	0.16	0.16	0.16	0.16	0.16	0.16	
Sat Flow, veh/h	622	2557	281	456	3087	115	196	971	410	218	1557	1554	
Grp Volume(v), veh/h	183	0	164	209	0	190	200	0	0	124	0	71	
Grp Sat Flow(s),veh/h/ln	1750	0	1710	1833	0	1825	1577	0	0	1776	0	1554	
Q Serve(g_s), s	6.2	0.0	5.6	7.5	0.0	6.7	5.4	0.0	0.0	0.0	0.0	3.4	
Cycle Q Clear(g_c), s	6.2	0.0	5.6	7.5	0.0	6.7	10.5	0.0	0.0	5.1	0.0	3.4	
Prop In Lane	0.36		0.16	0.25		0.06	0.19		0.26	0.21		1.00	
Lane Grp Cap(c), veh/h	663	0	647	582	0	580	307	0	0	340	0	253	
V/C Ratio(X)	0.28	0.00	0.25	0.36	0.00	0.33	0.65	0.00	0.00	0.36	0.00	0.28	
Avail Cap(c_a), veh/h	663	0	647	582	0	580	425	0	0	462	0	366	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.00	0.93	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	18.3	0.0	18.2	22.3	0.0	22.1	34.1	0.0	0.0	31.9	0.0	31.2	
Incr Delay (d2), s/veh	1.0	0.0	0.9	1.7	0.0	1.5	2.3	0.0	0.0	0.7	0.0	0.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.6	0.0	2.3	3.4	0.0	3.0	4.1	0.0	0.0	2.3	0.0	1.3	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	19.3	0.0	19.0	24.1	0.0	23.6	36.5	0.0	0.0	32.6	0.0	31.8	
LnGrp LOS	B	A	B	C	A	C	D	A	A	C	A	C	
Approach Vol, veh/h	347					399		200				195	
Approach Delay, s/veh	19.2					23.8		36.5				32.3	
Approach LOS	B					C		D				C	
Timer - Assigned Phs	2		4			6		8					
Phs Duration (G+Y+Rc), s	36.2		17.8			31.0		17.8					
Change Period (Y+Rc), s	4.0		4.0			4.0		4.0					
Max Green Setting (Gmax), s	26.0		20.0			27.0		20.0					
Max Q Clear Time (g_c+I1), s	8.2		7.1			9.5		12.5					
Green Ext Time (p_c), s	1.9		0.7			2.2		0.6					
Intersection Summary													
HCM 6th Ctrl Delay			26.1										
HCM 6th LOS			C										



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	321	38	97	363	5	114	38	162	22	60	35
Future Volume (veh/h)	11	321	38	97	363	5	114	38	162	22	60	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.94	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1796	1781	1900	1856	1900	1841	1900	1885	1900	1870	1767
Adj Flow Rate, veh/h	12	357	42	108	403	6	127	42	180	24	67	39
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	7	8	0	3	0	4	0	1	0	2	9
Cap, veh/h	16	880	103	139	649	10	259	86	282	120	336	364
Arrive On Green	0.01	0.29	0.29	0.08	0.36	0.36	0.19	0.19	0.19	0.25	0.25	0.25
Sat Flow, veh/h	1810	3055	356	1810	1822	27	1376	455	1499	487	1359	1474
Grp Volume(v), veh/h	12	198	201	108	0	409	169	0	180	91	0	39
Grp Sat Flow(s), veh/h/ln	1810	1706	1704	1810	0	1849	1831	0	1499	1846	0	1474
Q Serve(g_s), s	0.6	7.9	8.1	5.0	0.0	15.5	7.0	0.0	9.4	3.3	0.0	1.7
Cycle Q Clear(g_c), s	0.6	7.9	8.1	5.0	0.0	15.5	7.0	0.0	9.4	3.3	0.0	1.7
Prop In Lane	1.00		0.21	1.00		0.01	0.75		1.00	0.26		1.00
Lane Grp Cap(c), veh/h	16	492	491	139	0	658	345	0	282	456	0	364
V/C Ratio(X)	0.76	0.40	0.41	0.78	0.00	0.62	0.49	0.00	0.64	0.20	0.00	0.11
Avail Cap(c_a), veh/h	234	492	491	234	0	658	345	0	282	456	0	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	24.4	24.4	38.5	0.0	22.6	30.9	0.0	31.8	25.3	0.0	24.7
Incr Delay (d2), s/veh	52.8	2.4	2.5	9.1	0.0	4.4	4.9	0.0	10.5	1.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.4	3.5	2.5	0.0	7.3	3.5	0.0	4.2	1.5	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	94.9	26.8	26.9	47.6	0.0	27.0	35.8	0.0	42.4	26.3	0.0	25.3
LnGrp LOS	F	C	C	D	A	C	D	A	D	C	A	C
Approach Vol, veh/h	411			517			349			130		
Approach Delay, s/veh	28.9			31.3			39.2			26.0		
Approach LOS	C			C			D			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.5			20.0	4.7	35.3		25.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	20.0			16.0	11.0	20.0		21.0				
Max Q Clear Time (g_c+I1), s	10.1			11.4	2.6	17.5		5.3				
Green Ext Time (p_c), s	0.1	1.7		0.7	0.0	0.6		0.5				

Intersection Summary

HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



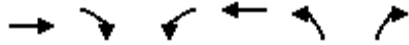
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	305	432	12	18	659	174	12	63	9	159	107	442
Future Volume (veh/h)	305	432	12	18	659	174	12	63	9	159	107	442
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1811	1900	1856	1870	1781	1900	1900	1856	1870	1870
Adj Flow Rate, veh/h	328	465	13	19	709	0	13	68	10	171	115	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	4	6	0	3	2	8	0	0	3	2	2
Cap, veh/h	417	2244	63	38	1933		254	311	46	290	359	
Arrive On Green	0.12	0.65	0.65	0.02	0.55	0.00	0.19	0.19	0.19	0.19	0.19	0.00
Sat Flow, veh/h	3510	3475	97	1810	3618	0	1217	1619	238	1311	1870	1585
Grp Volume(v), veh/h	328	234	244	19	709	0	13	0	78	171	115	0
Grp Sat Flow(s), veh/h/ln	1755	1749	1823	1810	1763	0	1217	0	1857	1311	1870	1585
Q Serve(g_s), s	7.7	4.6	4.7	0.9	9.7	0.0	0.8	0.0	3.0	10.8	4.5	0.0
Cycle Q Clear(g_c), s	7.7	4.6	4.7	0.9	9.7	0.0	5.3	0.0	3.0	13.8	4.5	0.0
Prop In Lane	1.00		0.05	1.00		0.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	417	1129	1177	38	1933		254	0	356	290	359	
V/C Ratio(X)	0.79	0.21	0.21	0.49	0.37		0.05	0.00	0.22	0.59	0.32	
Avail Cap(c_a), veh/h	661	1129	1177	192	1933		421	0	612	470	616	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	6.2	6.2	41.1	10.9	0.0	31.9	0.0	29.0	34.8	29.6	0.0
Incr Delay (d2), s/veh	1.3	0.4	0.4	3.5	0.5	0.0	0.1	0.0	0.3	0.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	1.6	1.7	0.4	3.6	0.0	0.2	0.0	1.3	3.4	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	6.6	6.6	44.6	11.4	0.0	31.9	0.0	29.3	35.5	29.8	0.0
LnGrp LOS	D	A	A	D	B		C	A	C	D	C	
Approach Vol, veh/h	806			728			91			286		
Approach Delay, s/veh	19.2			12.2			29.7			33.2		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	58.9			20.3	14.1	50.6		20.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	36.0			28.0	16.0	29.0		28.0				
Max Q Clear Time (g_c+12, s)	6.7			15.8	9.7	11.7		7.3				
Green Ext Time (p_c), s	0.0	3.0		0.5	0.4	4.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay 19.2
HCM 6th LOS B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (veh/h)	550	46	116	747	97	203
Future Volume (veh/h)	550	46	116	747	97	203
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1870	1885	1856	1885	1870
Adj Flow Rate, veh/h	573	48	121	778	101	211
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	2	1	3	1	2
Cap, veh/h	1753	146	153	2364	422	373
Arrive On Green	1.00	1.00	0.09	0.67	0.24	0.24
Sat Flow, veh/h	3348	272	1795	3618	1795	1585
Grp Volume(v), veh/h	307	314	121	778	101	211
Grp Sat Flow(s), veh/h/ln	1749	1779	1795	1763	1795	1585
Q Serve(g_s), s	0.0	0.0	5.6	7.9	3.9	10.0
Cycle Q Clear(g_c), s	0.0	0.0	5.6	7.9	3.9	10.0
Prop In Lane		0.15	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	941	958	153	2364	422	373
V/C Ratio(X)	0.33	0.33	0.79	0.33	0.24	0.57
Avail Cap(c_a), veh/h	941	958	296	2364	422	373
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.91	0.91	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	38.1	5.9	26.3	28.7
Incr Delay (d2), s/veh	0.9	0.9	3.1	0.1	1.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	2.6	2.5	1.8	4.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.9	0.9	41.3	6.0	27.7	34.8
LnGrp LOS	A	A	D	A	C	C
Approach Vol, veh/h	621			899	312	
Approach Delay, s/veh	0.9			10.7	32.5	
Approach LOS	A			B	C	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	1.2	49.8		61.0	24.0	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	4.0	39.0		57.0	20.0	
Max Q Clear Time (g_c+1), s	1.0	2.0		9.9	12.0	
Green Ext Time (p_c), s	0.1	4.3		6.6	0.4	
Intersection Summary						
HCM 6th Ctrl Delay			11.1			
HCM 6th LOS			B			

Ex_AM
28: Hagemann Ave/Trevethan Ave & Soquel Ave

Ex_AM
Timing Plan: AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	704	8	9	795	11	32	6	14	35	4	27
Future Volume (veh/h)	8	704	8	9	795	11	32	6	14	35	4	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1737	1856	1900	1900	1900	1796	1856	1900	1841
Adj Flow Rate, veh/h	8	733	8	9	828	11	33	6	15	36	4	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	4	0	11	3	0	0	0	7	3	0	4
Cap, veh/h	18	1877	20	19	1891	25	347	70	134	301	48	199
Arrive On Green	0.01	0.53	0.53	0.00	0.18	0.18	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1810	3542	39	1654	3560	47	878	221	423	745	151	627
Grp Volume(v), veh/h	8	362	379	9	410	429	54	0	0	68	0	0
Grp Sat Flow(s), veh/h/ln	1810	1749	1832	1654	1763	1845	1521	0	0	1523	0	0
Q Serve(g_s), s	0.4	10.4	10.4	0.5	17.7	17.7	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.4	10.4	10.4	0.5	17.7	17.7	1.8	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.03	0.61		0.28	0.53		0.41
Lane Grp Cap(c), veh/h	18	927	971	19	936	980	552	0	0	548	0	0
V/C Ratio(X)	0.44	0.39	0.39	0.48	0.44	0.44	0.10	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	192	927	971	175	936	980	552	0	0	548	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	0.96	0.96	0.96	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.8	11.8	11.8	42.1	23.7	23.7	20.4	0.0	0.0	20.6	0.0	0.0
Incr Delay (d2), s/veh	14.6	1.2	1.1	17.4	1.4	1.4	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.0	4.2	0.3	8.6	9.0	0.8	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	13.0	13.0	59.5	25.1	25.1	20.8	0.0	0.0	21.1	0.0	0.0
LnGrp LOS	E	B	B	E	C	C	C	A	A	C	A	A
Approach Vol, veh/h	749			848			54			68		
Approach Delay, s/veh	13.4			25.5			20.8			21.1		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	49.0		31.0	4.9	49.1		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	37.0	37.0		27.0	9.0	37.0		27.0				
Max Q Clear Time (g_c+I12.5	12.4	12.4		4.4	2.4	19.7		3.8				
Green Ext Time (p_c), s	0.0	4.9		0.2	0.0	5.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				19.9								
HCM 6th LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	713	5	12	790	25	4	0	1	34	4	35
Future Volume (veh/h)	29	713	5	12	790	25	4	0	1	34	4	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	0.96		0.93	0.95		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1900	1900	1856	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	30	735	5	12	814	26	4	0	1	35	4	36
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	4	0	0	3	0	0	0	0	0	0	0
Cap, veh/h	106	1749	12	26	1556	50	200	8	33	118	29	78
Arrive On Green	0.06	0.49	0.49	0.01	0.45	0.45	0.11	0.00	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1810	3560	24	1810	3481	111	1150	79	307	519	267	726
Grp Volume(v), veh/h	30	361	379	12	412	428	5	0	0	75	0	0
Grp Sat Flow(s), veh/h/ln	1810	1749	1835	1810	1763	1829	1537	0	0	1512	0	0
Q Serve(g_s), s	1.3	11.2	11.3	0.6	14.3	14.3	0.0	0.0	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	1.3	11.2	11.3	0.6	14.3	14.3	0.2	0.0	0.0	3.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.80		0.20	0.47		0.48
Lane Grp Cap(c), veh/h	106	859	902	26	788	818	241	0	0	225	0	0
V/C Ratio(X)	0.28	0.42	0.42	0.46	0.52	0.52	0.02	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	192	859	902	192	788	818	513	0	0	514	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.91	0.91	0.91	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.3	13.9	13.9	41.6	17.0	17.0	34.0	0.0	0.0	35.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	1.4	1.3	4.1	2.3	2.2	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.5	4.7	0.3	6.0	6.2	0.1	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	15.3	15.2	45.7	19.2	19.1	34.0	0.0	0.0	36.3	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	C	A	A	D	A	A
Approach Vol, veh/h	770			852			5			75		
Approach Delay, s/veh	16.1			19.5			34.0			36.3		
Approach LOS	B			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	45.8		13.1	9.0	42.0		13.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	38.0	38.0		26.0	9.0	38.0		26.0				
Max Q Clear Time (g_c+I12, s)	13.3	13.3		2.2	3.3	16.3		5.8				
Green Ext Time (p_c), s	0.0	4.9		0.0	0.0	5.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	18.8											
HCM 6th LOS	B											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	466	261	76	348	82	482	29	93	36	16	20
Future Volume (veh/h)	23	466	261	76	348	82	482	29	93	36	16	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1841	1856	1900	1856	1900	1870	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	24	496	0	81	370	87	535	0	0	38	17	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	4	3	0	3	0	2	0	1	0	0	0
Cap, veh/h	46	1823		104	1562	362	633	0		70	31	87
Arrive On Green	0.03	0.52	0.00	0.06	0.55	0.55	0.18	0.00	0.00	0.06	0.06	0.06
Sat Flow, veh/h	1810	3497	1572	1810	2822	655	3563	0	1598	1269	568	1577
Grp Volume(v), veh/h	24	496	0	81	229	228	535	0	0	55	0	21
Grp Sat Flow(s), veh/h/ln	1810	1749	1572	1810	1763	1714	1781	0	1598	1837	0	1577
Q Serve(g_s), s	1.1	6.7	0.0	3.8	5.7	5.8	12.3	0.0	0.0	2.5	0.0	1.1
Cycle Q Clear(g_c), s	1.1	6.7	0.0	3.8	5.7	5.8	12.3	0.0	0.0	2.5	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	0.69		1.00
Lane Grp Cap(c), veh/h	46	1823		104	976	948	633	0		101	0	87
V/C Ratio(X)	0.52	0.27		0.78	0.23	0.24	0.84	0.00		0.54	0.00	0.24
Avail Cap(c_a), veh/h	192	1823		149	976	948	796	0		324	0	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.9	11.4	0.0	39.5	9.7	9.8	33.8	0.0	0.0	39.1	0.0	38.5
Incr Delay (d2), s/veh	3.3	0.4	0.0	8.8	0.6	0.6	5.7	0.0	0.0	1.7	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	2.5	0.0	1.9	2.2	2.2	5.7	0.0	0.0	1.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.2	11.7	0.0	48.3	10.3	10.4	39.5	0.0	0.0	40.8	0.0	39.0
LnGrp LOS	D	B		D	B	B	D	A		D	A	D
Approach Vol, veh/h	520			538			535			76		
Approach Delay, s/veh	13.2			16.0			39.5			40.3		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	48.3		8.7	6.2	51.0		19.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	28.0		15.0	9.0	26.0		19.0				
Max Q Clear Time (g_c+15), s	8.7	8.7		4.5	3.1	7.8		14.3				
Green Ext Time (p_c), s	0.0	3.2		0.1	0.0	2.6		0.6				

Intersection Summary

HCM 6th Ctrl Delay 23.8
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩		↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (veh/h)	107	83	166	12	22	64	19	478	14	24	517	130
Future Volume (veh/h)	107	83	166	12	22	64	19	478	14	24	517	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1900	1870	1900	1900	1856	1900	1856	1900	1707	1870	1870
Adj Flow Rate, veh/h	110	86	171	12	23	66	20	493	14	25	533	134
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	0	2	0	0	3	0	3	0	13	2	2
Cap, veh/h	182	142	278	86	165	208	61	957	27	67	789	198
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.03	0.27	0.27	0.04	0.28	0.28
Sat Flow, veh/h	1037	811	1585	640	1228	1552	1810	3501	99	1626	2815	705
Grp Volume(v), veh/h	196	0	171	35	0	66	20	248	259	25	336	331
Grp Sat Flow(s), veh/h/ln	1848	0	1585	1868	0	1552	1810	1763	1838	1626	1777	1743
Q Serve(g_s), s	5.0	0.0	5.1	0.8	0.0	2.0	0.6	6.1	6.1	0.8	8.6	8.6
Cycle Q Clear(g_c), s	5.0	0.0	5.1	0.8	0.0	2.0	0.6	6.1	6.1	0.8	8.6	8.6
Prop In Lane	0.56		1.00	0.34		1.00	1.00		0.05	1.00		0.40
Lane Grp Cap(c), veh/h	324	0	278	251	0	208	61	482	502	67	498	489
V/C Ratio(X)	0.60	0.00	0.62	0.14	0.00	0.32	0.33	0.51	0.52	0.38	0.67	0.68
Avail Cap(c_a), veh/h	724	0	621	549	0	456	727	1209	1260	478	1375	1350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	19.4	19.5	0.0	20.0	24.1	15.7	15.7	23.8	16.3	16.3
Incr Delay (d2), s/veh	2.2	0.0	2.7	0.3	0.0	0.9	1.1	0.6	0.6	1.3	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.9	0.4	0.0	0.7	0.2	2.2	2.3	0.3	3.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	22.1	19.7	0.0	20.8	25.2	16.3	16.3	25.1	17.5	17.6
LnGrp LOS	C	A	C	B	A	C	C	B	B	C	B	B
Approach Vol, veh/h	367			101			527			692		
Approach Delay, s/veh	21.8			20.5			16.6			17.8		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	19.3		13.6	6.3	19.7		11.4				
Change Period (Y+Rc), s	4.6	* 5.4		4.6	4.6	5.4		4.6				
Max Green Setting (Gmax), s	5.0	* 35		20.0	20.5	39.5		15.0				
Max Q Clear Time (g_c+1), s	12.8	8.1		7.1	2.6	10.6		4.0				
Green Ext Time (p_c), s	0.0	2.6		1.7	0.0	3.7		0.2				

Intersection Summary

HCM 6th Ctrl Delay 18.5
HCM 6th LOS B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	194	21	128	137	2	55	38	56	2	53	43
Future Vol, veh/h	84	194	21	128	137	2	55	38	56	2	53	43
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	5	1	1	0	4	0	0	0	0	0
Mvmt Flow	99	228	25	151	161	2	65	45	66	2	62	51
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.3	15.6	11.5	10.4
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	37%	30%	0%	48%	0%	2%
Vol Thru, %	26%	70%	0%	52%	0%	54%
Vol Right, %	38%	0%	100%	0%	100%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	278	21	265	2	98
LT Vol	55	84	0	128	0	2
Through Vol	38	194	0	137	0	53
RT Vol	56	0	21	0	2	43
Lane Flow Rate	175	327	25	312	2	115
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.291	0.547	0.035	0.532	0.003	0.19
Departure Headway (Hd)	5.968	6.016	5.152	6.146	5.19	5.943
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	600	599	693	586	687	600
Service Time	4.035	3.766	2.902	3.898	2.942	4.02
HCM Lane V/C Ratio	0.292	0.546	0.036	0.532	0.003	0.192
HCM Control Delay	11.5	15.8	8.1	15.7	8	10.4
HCM Lane LOS	B	C	A	C	A	B
HCM 95th-tile Q	1.2	3.3	0.1	3.1	0	0.7

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	123	61	307	27	13	69
Future Vol, veh/h	123	61	307	27	13	69
Conflicting Peds, #/hr	10	0	0	14	14	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	4	4	0	16
Mvmt Flow	134	66	334	29	14	75
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	476	363	0	0	377	0
Stage 1	363	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	548	682	-	-	1193	-
Stage 1	704	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	530	674	-	-	1179	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	696	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13	0	1.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 530 674 1179	-	-		
HCM Lane V/C Ratio	-	- 0.252 0.098 0.012	-	-		
HCM Control Delay (s)	-	- 14.1 10.9 8.1	0			
HCM Lane LOS	-	- B B A A				
HCM 95th %tile Q(veh)	-	- 1 0.3 0	-			

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	57	4	332	0	0	189
Future Vol, veh/h	57	4	332	0	0	189
Conflicting Peds, #/hr	8	0	0	15	15	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	0	4	0	0	7
Mvmt Flow	61	4	357	0	0	203
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	467	357	0	-	-	-
Stage 1	357	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.63	6.2	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.3	-	-	-	-
Pot Cap-1 Maneuver	539	692	-	0	0	-
Stage 1	707	-	-	0	0	-
Stage 2	903	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	535	692	-	-	-	-
Mov Cap-2 Maneuver	535	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.5	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 543		-			
HCM Lane V/C Ratio	- 0.121		-			
HCM Control Delay (s)	- 12.5		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.4		-			

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	403	366	7	15	60
Future Vol, veh/h	62	403	366	7	15	60
Conflicting Peds, #/hr	7	0	0	7	4	17
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	10	2	2	0	0	8
Mvmt Flow	65	420	381	7	16	63
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	395	0	-	0	946	409
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	554	-
Critical Hdwy	4.2	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.29	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1121	-	-	-	293	630
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	580	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1114	-	-	-	273	617
Mov Cap-2 Maneuver	-	-	-	-	273	-
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	577	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		13.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1114	-	-	-	493	
HCM Lane V/C Ratio	0.058	-	-	-	0.158	
HCM Control Delay (s)	8.4	-	-	-	13.7	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	5	7	5	7	9	4	5	93	11	16	69	4
Future Vol, veh/h	5	7	5	7	9	4	5	93	11	16	69	4
Conflicting Peds, #/hr	28	0	8	8	0	28	52	0	10	10	0	52
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	7	0
Mvmt Flow	6	8	6	8	11	5	6	111	13	19	82	5
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	341	321	145	278	317	156	139	0	0	134	0	0
Stage 1	175	175	-	140	140	-	-	-	-	-	-	-
Stage 2	166	146	-	138	177	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	617	599	908	678	602	895	1457	-	-	1463	-	-
Stage 1	832	758	-	868	785	-	-	-	-	-	-	-
Stage 2	841	780	-	870	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	557	558	863	646	560	867	1394	-	-	1451	-	-
Mov Cap-2 Maneuver	557	558	-	646	560	-	-	-	-	-	-	-
Stage 1	792	716	-	857	775	-	-	-	-	-	-	-
Stage 2	802	770	-	836	714	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11		10.9		0.3		1.4					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1394	-	-	622	634	1451	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.033	0.038	0.013	-	-				
HCM Control Delay (s)	7.6	0	-	11	10.9	7.5	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	19	12	3	3	0	4	4	396	10	48	410	19
Future Vol, veh/h	19	12	3	3	0	4	4	396	10	48	410	19
Conflicting Peds, #/hr	20	0	6	6	0	20	3	0	19	19	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	20	13	3	3	0	4	4	426	11	52	441	20

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1020	1022	460	1028	1027	471	464	0	0	456	0	0
Stage 1	558	558	-	459	459	-	-	-	-	-	-	-
Stage 2	462	464	-	569	568	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	217	238	605	214	236	597	1108	-	-	1115	-	-
Stage 1	518	515	-	586	570	-	-	-	-	-	-	-
Stage 2	584	567	-	511	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	200	218	600	189	216	578	1105	-	-	1097	-	-
Mov Cap-2 Maneuver	200	218	-	189	216	-	-	-	-	-	-	-
Stage 1	514	481	-	574	558	-	-	-	-	-	-	-
Stage 2	567	555	-	461	476	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.7		17		0.1		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1105	-	-	219	307	1097	-
HCM Lane V/C Ratio	0.004	-	-	0.167	0.025	0.047	-
HCM Control Delay (s)	8.3	0	-	24.7	17	8.4	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0.1	-

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	399	24	0	410	43	0	0	8	0	0	72
Future Vol, veh/h	44	399	24	0	410	43	0	0	8	0	0	72
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	45	411	25	0	423	44	0	0	8	0	0	74
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	488	0	0	-	-	0	-	-	468	-	-	469
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.2	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	1060	-	-	0	-	-	0	0	599	0	0	598
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1041	-	-	-	-	-	-	-	577	-	-	586
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0			11.3			12		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1					
Capacity (veh/h)	577	1041	-	-	-	-	586					
HCM Lane V/C Ratio	0.014	0.044	-	-	-	-	0.127					
HCM Control Delay (s)	11.3	8.6	-	-	-	-	12					
HCM Lane LOS	B	A	-	-	-	-	B					
HCM 95th %tile Q(veh)	0	0.1	-	-	-	-	0.4					

EX_PM
5: Pacific Ave & Laurel St

EX_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	385	18	25	384	37	27	58	32	41	46	23
Future Volume (veh/h)	28	385	18	25	384	37	27	58	32	41	46	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.93	0.80		0.69	0.80		0.68
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	29	397	19	26	396	38	28	60	33	42	47	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	71	880	42	76	843	81	289	204	112	125	123	53
Arrive On Green	0.04	0.50	0.50	0.04	0.50	0.50	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	1764	84	1810	1681	161	1083	940	517	336	569	244
Grp Volume(v), veh/h	29	0	416	26	0	434	28	0	93	113	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1848	1810	0	1843	1083	0	1458	1149	0	0
Q Serve(g_s), s	1.5	0.0	13.8	1.3	0.0	14.6	0.0	0.0	5.1	3.6	0.0	0.0
Cycle Q Clear(g_c), s	1.5	0.0	13.8	1.3	0.0	14.6	2.6	0.0	5.1	8.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.09	1.00		0.35	0.37		0.21
Lane Grp Cap(c), veh/h	71	0	922	76	0	924	289	0	316	301	0	0
V/C Ratio(X)	0.41	0.00	0.45	0.34	0.00	0.47	0.10	0.00	0.29	0.38	0.00	0.00
Avail Cap(c_a), veh/h	206	0	922	206	0	924	327	0	368	344	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.95	0.00	0.95	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	44.5	0.0	15.4	44.2	0.0	15.4	30.1	0.0	31.1	32.3	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.6	0.9	0.0	1.6	0.1	0.0	0.5	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	6.0	0.6	0.0	6.2	0.5	0.0	1.8	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	0.0	17.0	45.2	0.0	17.1	30.3	0.0	31.6	33.1	0.0	0.0
LnGrp LOS	D	A	B	D	A	B	C	A	C	C	A	A
Approach Vol, veh/h		445			460			121			113	
Approach Delay, s/veh		18.9			18.7			31.3			33.1	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	52.2		24.6	8.2	52.0		24.6				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 11	47.4		24.0	* 11	47.4		24.0				
Max Q Clear Time (g_c+I1), s	3.5	16.6		10.7	3.3	15.8		7.1				
Green Ext Time (p_c), s	0.0	3.0		0.5	0.0	2.8		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	509	15	185	324	74	10	146	276	55	239	102
Future Volume (veh/h)	72	509	15	185	324	74	10	146	276	55	239	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	74	525	15	191	334	76	10	151	285	57	246	105
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	131	1109	32	206	667	565	35	386	327	119	315	134
Arrive On Green	0.02	0.10	0.10	0.11	0.35	0.35	0.02	0.20	0.20	0.07	0.25	0.25
Sat Flow, veh/h	1810	3584	102	1810	1900	1610	1810	1900	1610	1810	1264	539
Grp Volume(v), veh/h	74	264	276	191	334	76	10	151	285	57	0	351
Grp Sat Flow(s),veh/h/ln	1810	1805	1882	1810	1900	1610	1810	1900	1610	1810	0	1803
Q Serve(g_s), s	3.8	13.1	13.1	9.9	13.2	3.1	0.5	6.5	16.3	2.9	0.0	17.2
Cycle Q Clear(g_c), s	3.8	13.1	13.1	9.9	13.2	3.1	0.5	6.5	16.3	2.9	0.0	17.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	131	559	582	206	667	565	35	386	327	119	0	449
V/C Ratio(X)	0.57	0.47	0.47	0.93	0.50	0.13	0.28	0.39	0.87	0.48	0.00	0.78
Avail Cap(c_a), veh/h	320	559	582	206	667	565	168	488	414	244	0	539
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.9	35.3	35.4	41.7	24.3	21.0	45.9	32.8	36.7	42.8	0.0	33.3
Incr Delay (d2), s/veh	1.4	2.7	2.6	40.3	2.5	0.5	1.6	0.6	15.2	1.1	0.0	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.7	7.0	6.7	6.2	1.2	0.2	3.0	7.7	1.3	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	38.1	38.0	82.0	26.7	21.5	47.5	33.4	51.9	44.0	0.0	39.4
LnGrp LOS	D	D	D	F	C	C	D	C	D	D	A	D
Approach Vol, veh/h	614			601			446			408		
Approach Delay, s/veh	39.0			43.6			45.5			40.0		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	37.9	6.1	28.3	15.0	34.0	10.4	23.9				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	17.8	23.4	* 8.8	28.4	* 11	29.4	* 13	24.4				
Max Q Clear Time (g_c+15, s)	15.8	15.2	2.5	19.2	11.9	15.1	4.9	18.3				
Green Ext Time (p_c), s	0.1	1.4	0.0	1.4	0.0	2.8	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 8.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	164	2	14	147	0	10	0	11	21	15	29
Future Vol, veh/h	0	164	2	14	147	0	10	0	11	21	15	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	173	2	15	155	0	11	0	12	22	16	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.5	8.5	7.8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	48%	0%	9%	58%	0%
Vol Thru, %	0%	99%	91%	42%	0%
Vol Right, %	52%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	166	161	36	29
LT Vol	10	0	14	21	0
Through Vol	0	164	147	15	0
RT Vol	11	2	0	0	29
Lane Flow Rate	22	175	169	38	31
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.028	0.209	0.204	0.059	0.039
Departure Headway (Hd)	4.64	4.314	4.327	5.58	4.582
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	772	833	832	643	783
Service Time	2.665	2.329	2.341	3.302	2.303
HCM Lane V/C Ratio	0.028	0.21	0.203	0.059	0.04
HCM Control Delay	7.8	8.5	8.5	8.7	7.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.8	0.8	0.2	0.1

SITE LAYOUT

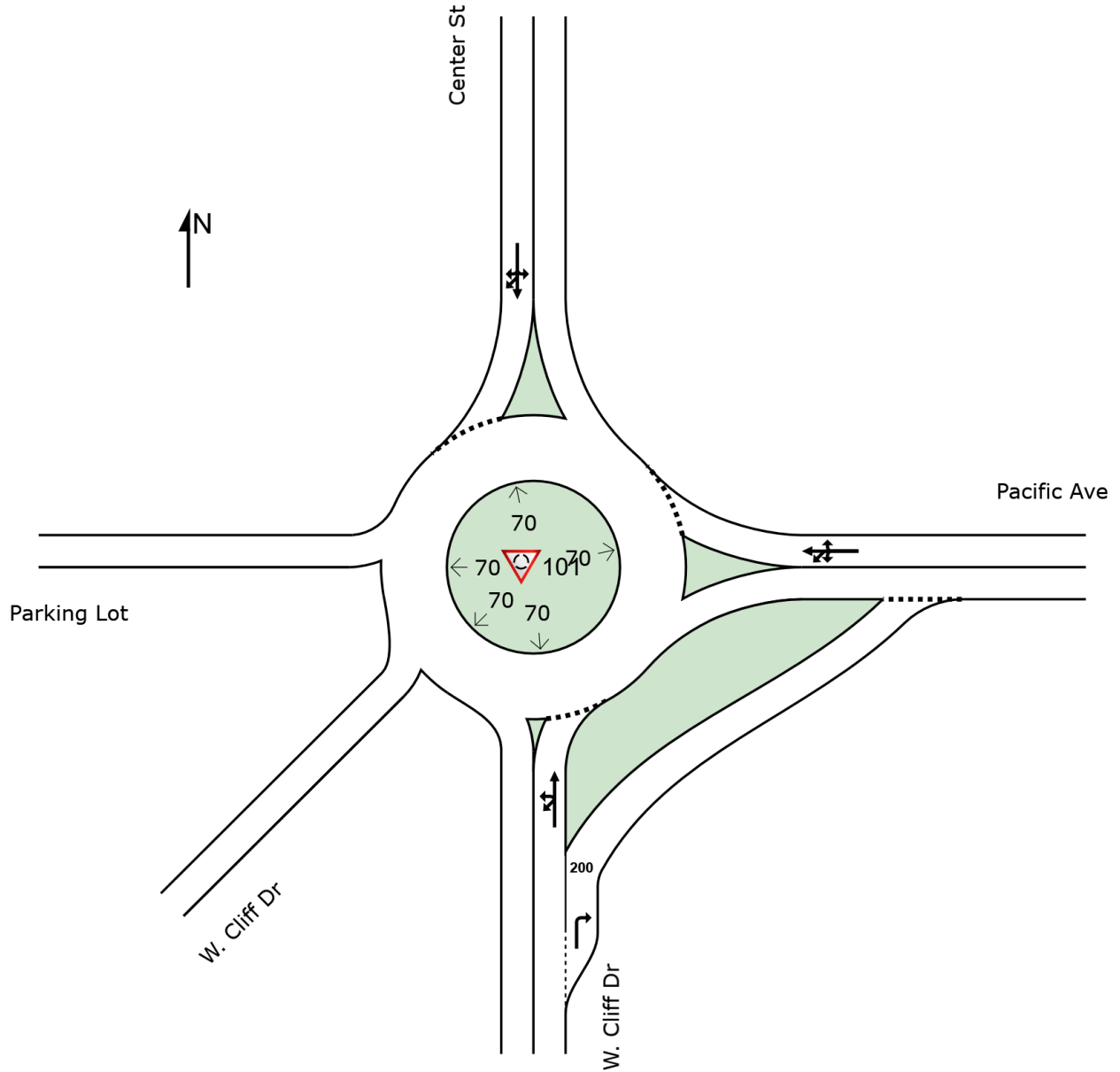
 **Site: 101 [INT #9 Ex_PM (Site Folder: Existing Conditions)]**

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 Site: 101 [INT #9 Ex_PM (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	HV %	[Total veh/h]	HV %						[Veh]	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			ft		ft	%	%
South: W. Cliff Dr															
Lane 1 ^d	163	3.0	163	3.0	1319	0.124	100	3.7	LOS A	0.5	13.4	Full	1600	0.0	0.0
Lane 2	393	3.0	393	3.0	1278	0.307	100	5.4	LOS A	1.8	45.1	Short	200	0.0	NA
Approach	556	3.0	556	3.0		0.307		4.9	LOS A	1.8	45.1				
East: Pacific Ave															
Lane 1 ^d	521	3.0	521	3.0	1126	0.463	100	8.1	LOS A	3.0	77.0	Full	1600	0.0	0.0
Approach	521	3.0	521	3.0		0.463		8.1	LOS A	3.0	77.0				
North: Center St															
Lane 1 ^d	272	3.0	272	3.0	755	0.360	100	9.2	LOS A	1.7	44.4	Full	1600	0.0	0.0
Approach	272	3.0	272	3.0		0.360		9.2	LOS A	1.7	44.4				
All Vehicles	1348	3.0	1348	3.0		0.463		7.0	LOS A	3.0	77.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: W. Cliff Dr												
Mov.	L3	L2	T1	R2	Total	%HV						
From S							Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	SW	W	N	E			veh/h	Satn	Util.	SL	Ov.	Lane
								v/c	%	%		No.
Lane 1	41	4	118	-	163	3.0	1319	0.124	100	NA	NA	
Lane 2	-	-	-	393	393	3.0	1278	0.307	100	0.0	1	
Approach	41	4	118	393	556	3.0		0.307				
East: Pacific Ave												
Mov.	L2	L1	T1	R2	Total	%HV						
From E							Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	S	SW	W	N			veh/h	Satn	Util.	SL	Ov.	Lane
								v/c	%	%		No.
Lane 1	112	366	8	35	521	3.0	1126	0.463	100	NA	NA	
Approach	112	366	8	35	521	3.0		0.463				
North: Center St												
Mov.	L2	T1	R1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	

From N To Exit:	E	S	SW	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	46	83	141	1	272	3.0	755	0.360	100	NA	NA
Approach	46	83	141	1	272	3.0		0.360			
Total %HV Deg. Satn (v/c)											
All Vehicles	1348	3.0		0.463							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (vph)	400	18	326	388	48	397
Future Volume (vph)	400	18	326	388	48	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3537		1805	3574	1787	1571
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3537		1805	3574	1787	1571
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	421	19	343	408	51	418
RTOR Reduction (vph)	2	0	0	0	0	363
Lane Group Flow (vph)	438	0	343	408	51	55
Confl. Peds. (#/hr)		16	16			3
Confl. Bikes (#/hr)		15				
Heavy Vehicles (%)	1%	0%	0%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1 3 9	1 2 3 9	4	
Permitted Phases						4
Actuated Green, G (s)	21.0		71.5	100.5	16.5	16.5
Effective Green, g (s)	21.0		71.5	100.5	16.5	16.5
Actuated g/C Ratio	0.17		0.57	0.80	0.13	0.13
Clearance Time (s)	4.0				4.0	4.0
Vehicle Extension (s)	3.0				3.0	3.0
Lane Grp Cap (vph)	594		1032	2873	235	207
v/s Ratio Prot	c0.12		c0.19	0.11	0.03	
v/s Ratio Perm						c0.04
v/c Ratio	0.74		0.33	0.14	0.22	0.27
Uniform Delay, d1	49.4		14.1	2.7	48.5	48.8
Progression Factor	1.00		0.33	0.23	1.00	1.00
Incremental Delay, d2	7.9		0.1	0.0	0.5	0.7
Delay (s)	57.3		4.8	0.6	48.9	49.5
Level of Service	E		A	A	D	D
Approach Delay (s)	57.3			2.5	49.4	
Approach LOS	E			A	D	
Intersection Summary						
HCM 2000 Control Delay			30.3		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			125.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			49.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

EX_PM

EX_PM

11: Front St/Pacific Ave & Mission St/Water St

Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	603	115	104	520	8	0	0	0	9	101	139
Future Volume (vph)	107	603	115	104	520	8	0	0	0	9	101	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95						1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00						1.00	0.87
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.98		1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)	1787	3452		3502	3556						1858	1392
Flt Permitted	0.95	1.00		0.95	1.00						1.00	1.00
Satd. Flow (perm)	1787	3452		3502	3556						1858	1392
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	111	628	120	108	542	8	0	0	0	9	105	145
RTOR Reduction (vph)	0	12	0	0	1	0	0	0	0	0	0	128
Lane Group Flow (vph)	111	736	0	108	549	0	0	0	0	0	114	17
Confl. Peds. (#/hr)	14		26	26		14	43		43	43		43
Confl. Bikes (#/hr)			15			19			1			8
Heavy Vehicles (%)	1%	1%	1%	0%	1%	13%	0%	0%	0%	0%	2%	1%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	4 5	4 5 6		9	6 9					3	3	
Permitted Phases												3
Actuated Green, G (s)	37.5	73.7		20.3	56.5						15.0	15.0
Effective Green, g (s)	37.5	73.7		20.3	56.5						15.0	15.0
Actuated g/C Ratio	0.30	0.59		0.16	0.45						0.12	0.12
Clearance Time (s)				4.0							4.0	4.0
Vehicle Extension (s)				3.0							2.0	2.0
Lane Grp Cap (vph)	536	2035		568	1607						222	167
v/s Ratio Prot	0.06	c0.21		0.03	c0.15						c0.06	
v/s Ratio Perm												0.01
v/c Ratio	0.21	0.36		0.19	0.34						0.51	0.10
Uniform Delay, d1	32.7	13.4		45.2	22.2						51.6	49.0
Progression Factor	0.54	0.63		1.00	1.00						1.00	1.00
Incremental Delay, d2	0.1	0.1		0.2	0.1						0.8	0.1
Delay (s)	17.9	8.5		45.4	22.3						52.4	49.1
Level of Service	B	A		D	C						D	D
Approach Delay (s)		9.7			26.1			0.0			50.6	
Approach LOS		A			C			A			D	
Intersection Summary												
HCM 2000 Control Delay			21.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			125.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			48.2%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

EX_PM
12: River St & Water St

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	497	56	204	528	233	125	233	243	220	175	20
Future Volume (veh/h)	45	497	56	204	528	233	125	233	243	220	175	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	48	529	60	217	562	248	133	248	0	234	186	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	62	1772	765	247	2142	912	161	444		189	231	26
Arrive On Green	0.03	0.49	0.49	0.14	0.60	0.60	0.09	0.12	0.00	0.10	0.14	0.14
Sat Flow, veh/h	1795	3582	1547	1795	3582	1525	1795	3582	1598	1810	1667	188
Grp Volume(v), veh/h	48	529	60	217	562	248	133	248	0	234	0	207
Grp Sat Flow(s),veh/h/ln	1795	1791	1547	1795	1791	1525	1795	1791	1598	1810	0	1855
Q Serve(g_s), s	3.0	10.1	2.3	13.6	8.6	9.0	8.4	7.5	0.0	12.0	0.0	12.4
Cycle Q Clear(g_c), s	3.0	10.1	2.3	13.6	8.6	9.0	8.4	7.5	0.0	12.0	0.0	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	62	1772	765	247	2142	912	161	444		189	0	257
V/C Ratio(X)	0.78	0.30	0.08	0.88	0.26	0.27	0.82	0.56		1.24	0.00	0.81
Avail Cap(c_a), veh/h	125	1772	765	390	2142	912	297	1028		189	0	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.1	17.2	15.3	48.6	11.0	11.1	51.4	47.4	0.0	51.5	0.0	48.0
Incr Delay (d2), s/veh	7.1	0.4	0.2	8.3	0.3	0.7	4.0	1.1	0.0	144.5	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.2	0.9	6.7	3.4	3.1	3.9	3.4	0.0	13.0	0.0	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	17.6	15.5	57.0	11.3	11.8	55.5	48.5	0.0	196.0	0.0	53.9
LnGrp LOS	E	B	B	E	B	B	E	D		F	A	D
Approach Vol, veh/h	637			1027			381			441		
Approach Delay, s/veh	20.8			21.1			50.9			129.3		
Approach LOS	C			C			D			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	60.9	16.0	18.3	8.0	72.8	14.3	19.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	25.0	29.0	12.0	33.0	8.0	46.0	19.0	26.0				
Max Q Clear Time (g_c+I1), s	11.6	12.1	14.0	9.5	5.0	11.0	10.4	14.4				
Green Ext Time (p_c), s	0.2	3.5	0.0	1.5	0.0	5.3	0.1	0.8				

Intersection Summary

HCM 6th Ctrl Delay 44.8

HCM 6th LOS D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

EX_PM
13: Ocean St & Water St

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	603	84	93	463	181	131	482	66	235	698	298
Future Volume (veh/h)	356	603	84	93	463	181	131	482	66	235	698	298
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1885	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	379	641	0	99	493	0	139	513	70	250	743	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	0	1	1	1
Cap, veh/h	444	857		124	647		167	1654	720	318	1646	
Arrive On Green	0.13	0.24	0.00	0.07	0.18	0.00	0.09	0.46	0.46	0.09	0.46	0.00
Sat Flow, veh/h	3483	3582	1610	1810	3582	1598	1795	3582	1559	3483	3582	1598
Grp Volume(v), veh/h	379	641	0	99	493	0	139	513	70	250	743	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1610	1810	1791	1598	1795	1791	1559	1742	1791	1598
Q Serve(g_s), s	12.3	19.1	0.0	6.2	15.0	0.0	8.8	10.3	2.9	8.1	16.3	0.0
Cycle Q Clear(g_c), s	12.3	19.1	0.0	6.2	15.0	0.0	8.8	10.3	2.9	8.1	16.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	857		124	647		167	1654	720	318	1646	
V/C Ratio(X)	0.85	0.75		0.80	0.76		0.83	0.31	0.10	0.79	0.45	
Avail Cap(c_a), veh/h	515	903		205	779		281	1654	720	787	1646	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.1	40.5	0.0	52.8	44.8	0.0	51.2	19.4	17.4	51.2	21.2	0.0
Incr Delay (d2), s/veh	11.8	3.3	0.0	4.4	3.7	0.0	4.0	0.5	0.3	1.7	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	8.8	0.0	3.0	7.0	0.0	4.1	4.4	1.1	3.6	6.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.9	43.8	0.0	57.1	48.4	0.0	55.3	19.9	17.7	52.8	22.1	0.0
LnGrp LOS	E	D		E	D		E	B	B	D	C	
Approach Vol, veh/h	1020			592			722			993		
Approach Delay, s/veh	50.2			49.9			26.5			29.8		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.9	31.5	14.7	56.9	18.7	24.8	14.5	57.1				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	29.0	18.0	39.0	17.0	25.0	26.0	31.0				
Max Q Clear Time (g_c+1/3), s	13.2	21.1	10.8	18.3	14.3	17.0	10.1	12.3				
Green Ext Time (p_c), s	0.0	2.6	0.1	5.2	0.4	2.0	0.4	3.5				

Intersection Summary

HCM 6th Ctrl Delay 38.9
HCM 6th LOS D

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

EX_PM
14: Ocean St & Kennan St/Washburn Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	1	9	16	1	22	38	942	13	77	1212	7
Future Volume (veh/h)	14	1	9	16	1	22	38	942	13	77	1212	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.94	0.96		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	15	1	10	17	1	24	41	1013	14	83	1303	8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	119	18	55	192	10	150	57	2068	892	114	2180	939
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.03	0.58	0.58	0.06	0.61	0.61
Sat Flow, veh/h	718	187	566	1348	99	1546	1810	3582	1544	1810	3582	1543
Grp Volume(v), veh/h	26	0	0	18	0	24	41	1013	14	83	1303	8
Grp Sat Flow(s),veh/h/ln	1471	0	0	1448	0	1546	1810	1791	1544	1810	1791	1543
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	1.6	2.6	19.2	0.4	5.2	25.7	0.2
Cycle Q Clear(g_c), s	1.6	0.0	0.0	1.1	0.0	1.6	2.6	19.2	0.4	5.2	25.7	0.2
Prop In Lane	0.58		0.38	0.94		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	0	0	202	0	150	57	2068	892	114	2180	939
V/C Ratio(X)	0.14	0.00	0.00	0.09	0.00	0.16	0.71	0.49	0.02	0.73	0.60	0.01
Avail Cap(c_a), veh/h	364	0	0	369	0	336	126	2068	892	189	2180	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	0.0	0.0	47.3	0.0	47.6	55.2	14.3	10.4	52.9	13.8	8.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.2	6.0	0.8	0.0	8.6	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.5	0.0	0.6	1.3	7.7	0.2	2.6	10.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	0.0	0.0	47.4	0.0	47.8	61.1	15.1	10.4	61.5	15.1	8.9
LnGrp LOS	D	A	A	D	A	D	E	B	B	E	B	A
Approach Vol, veh/h	26		42			1068			1394			
Approach Delay, s/veh	47.7		47.6			16.8			17.8			
Approach LOS	D		D			B			B			
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	15.2		7.7	74.0		15.2		11.2	70.4			
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0		4.0	4.0			
Max Green Setting (Gmax), s	25.0		8.0	70.0		25.0		12.0	66.0			
Max Q Clear Time (g_c+I1), s	3.6		4.6	27.7		3.6		7.2	21.2			
Green Ext Time (p_c), s	0.0		0.0	13.7		0.1		0.1	9.5			
Intersection Summary												
HCM 6th Ctrl Delay			18.2									
HCM 6th LOS			B									

EX_PM
15: Ocean St & Plymouth St & SR-1 Ramp

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	20	226	323	49	76	17	277	459	272	65	870	230
Future Volume (veh/h)	20	226	323	49	76	17	277	459	272	65	870	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1885	1885
Adj Flow Rate, veh/h	21	233	0	51	78	18	286	473	0	67	897	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	0	1	1	1	0	1	1
Cap, veh/h	86	357		346	296	68	359	1908		86	1361	
Arrive On Green	0.20	0.20	0.00	0.20	0.20	0.20	0.20	0.53	0.00	0.05	0.38	0.00
Sat Flow, veh/h	76	1775	1598	1148	1473	340	1795	3582	1598	1810	3676	0
Grp Volume(v), veh/h	254	0	0	51	0	96	286	473	0	67	897	0
Grp Sat Flow(s), veh/h/ln	1851	0	1598	1148	0	1813	1795	1791	1598	1810	1791	0
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	2.4	8.3	3.9	0.0	2.0	11.4	0.0
Cycle Q Clear(g_c), s	6.9	0.0	0.0	2.3	0.0	2.4	8.3	3.9	0.0	2.0	11.4	0.0
Prop In Lane	0.08		1.00	1.00		0.19	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	443	0		346	0	364	359	1908		86	1361	
V/C Ratio(X)	0.57	0.00		0.15	0.00	0.26	0.80	0.25		0.78	0.66	
Avail Cap(c_a), veh/h	973	0		680	0	893	1015	4377		297	2940	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.2	0.0	0.0	18.4	0.0	18.5	20.9	6.9	0.0	25.8	14.1	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.2	0.0	0.4	4.0	0.1	0.0	14.3	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.0	0.5	0.0	1.0	3.6	1.2	0.0	1.1	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	0.0	0.0	18.6	0.0	18.9	24.9	7.0	0.0	40.2	14.6	0.0
LnGrp LOS	C	A		B	A	B	C	A		D	B	
Approach Vol, veh/h	254			147			759			964		
Approach Delay, s/veh	21.4			18.8			13.7			16.4		
Approach LOS	C			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	33.2		15.0	15.0	24.8		15.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	67.0	67.0		27.0	31.0	45.0		27.0				
Max Q Clear Time (g_c+14), s	5.9	5.9		8.9	10.3	13.4		4.4				
Green Ext Time (p_c), s	0.0	3.6		1.3	0.8	7.5		0.6				

Intersection Summary

HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	113	10	195	74	30	28	903	242	68	961	36
Future Volume (veh/h)	23	113	10	195	74	30	28	903	242	68	961	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1841	1885	1900	1900	1856	1856	1885	1870	1900
Adj Flow Rate, veh/h	25	122	11	210	80	32	30	971	260	73	1033	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	4	1	0	0	3	3	1	2	0
Cap, veh/h	68	187	17	159	206	82	76	1630	435	108	2136	81
Arrive On Green	0.04	0.11	0.11	0.09	0.16	0.16	0.04	0.59	0.59	0.06	0.61	0.61
Sat Flow, veh/h	1810	1706	154	1753	1264	506	1810	2745	733	1795	3490	132
Grp Volume(v), veh/h	25	0	133	210	0	112	30	622	609	73	526	546
Grp Sat Flow(s),veh/h/ln	1810	0	1859	1753	0	1770	1810	1763	1715	1795	1777	1845
Q Serve(g_s), s	1.6	0.0	8.3	11.0	0.0	6.8	2.0	26.8	27.1	4.8	19.7	19.7
Cycle Q Clear(g_c), s	1.6	0.0	8.3	11.0	0.0	6.8	2.0	26.8	27.1	4.8	19.7	19.7
Prop In Lane	1.00		0.08	1.00		0.29	1.00		0.43	1.00		0.07
Lane Grp Cap(c), veh/h	68	0	204	159	0	288	76	1047	1018	108	1088	1129
V/C Ratio(X)	0.37	0.00	0.65	1.32	0.00	0.39	0.39	0.59	0.60	0.67	0.48	0.48
Avail Cap(c_a), veh/h	389	0	446	159	0	307	239	1047	1018	237	1088	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	0.0	51.7	55.0	0.0	45.3	56.5	15.4	15.5	55.7	12.9	12.9
Incr Delay (d2), s/veh	2.4	0.0	5.0	180.1	0.0	1.2	2.5	2.5	2.6	7.0	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	4.2	12.8	0.0	3.1	0.9	11.1	10.9	2.4	8.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	0.0	56.6	235.1	0.0	46.5	58.9	17.9	18.1	62.7	14.5	14.4
LnGrp LOS	E	A	E	F	A	D	E	B	B	E	B	B
Approach Vol, veh/h	158			322			1261			1145		
Approach Delay, s/veh	57.1			169.5			19.0			17.5		
Approach LOS	E			F			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.5	76.4	15.2	17.8	9.3	78.7	8.7	24.3				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	* 4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax),s	16	39.0	* 11	* 29	* 16	40.0	* 26	21.0				
Max Q Clear Time (g_c+16),s	16.8	29.1	13.0	10.3	4.0	21.7	3.6	8.8				
Green Ext Time (p_c), s	0.1	6.9	0.0	0.8	0.0	9.3	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	378	50	97	272	8	20	164	180	10	87	8
Future Volume (veh/h)	11	378	50	97	272	8	20	164	180	10	87	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.97	0.98		0.93	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1870	1900	1900	1856	1900	1900	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	12	420	56	108	302	9	22	182	200	11	97	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	9	2	0	0	3	0	0	1	0	0	2	0
Cap, veh/h	31	572	76	211	813	24	112	415	356	105	374	32
Arrive On Green	0.02	0.36	0.36	0.12	0.45	0.45	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1682	1606	214	1810	1790	53	93	1747	1500	65	1576	137
Grp Volume(v), veh/h	12	0	476	108	0	311	204	0	200	117	0	0
Grp Sat Flow(s), veh/h/ln	1682	0	1820	1810	0	1844	1841	0	1500	1777	0	0
Q Serve(g_s), s	0.3	0.0	10.1	2.5	0.0	4.9	0.0	0.0	5.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	10.1	2.5	0.0	4.9	4.1	0.0	5.2	2.3	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.03	0.11		1.00	0.09		0.08
Lane Grp Cap(c), veh/h	31	0	648	211	0	837	527	0	356	511	0	0
V/C Ratio(X)	0.38	0.00	0.73	0.51	0.00	0.37	0.39	0.00	0.56	0.23	0.00	0.00
Avail Cap(c_a), veh/h	686	0	1237	738	0	1253	1320	0	1019	877	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.4	0.0	12.4	18.3	0.0	7.9	14.4	0.0	14.8	13.7	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	1.6	0.7	0.0	0.3	0.5	0.0	1.4	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.5	1.0	0.0	1.5	1.5	0.0	1.6	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	14.0	19.0	0.0	8.2	14.9	0.0	16.2	13.9	0.0	0.0
LnGrp LOS	C	A	B	B	A	A	B	A	B	B	A	A
Approach Vol, veh/h	488			419			404			117		
Approach Delay, s/veh	14.3			11.0			15.5			13.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	19.7		15.1	5.0	24.0		15.1				
Change Period (Y+Rc), s	4.2	4.0		* 4.6	* 4.2	4.0		4.6				
Max Green Setting (Gmax), s	18	30.0		* 20	* 18	30.0		30.0				
Max Q Clear Time (g_c+14.5), s	14.5	12.1		4.3	2.3	6.9		7.2				
Green Ext Time (p_c), s	0.1	2.9		0.5	0.0	1.8		1.9				

Intersection Summary

HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	410	34	32	339	66	22	36	43	104	56	47
Future Volume (veh/h)	53	410	34	32	339	66	22	36	43	104	56	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	1.00		0.89	1.00		0.94	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1900	1870	1900	1900	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	55	427	35	33	353	69	23	38	45	108	58	49
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	0	0	2	0	0	0	0	0	2	0
Cap, veh/h	104	527	402	79	394	77	55	70	402	66	22	401
Arrive On Green	0.06	0.28	0.28	0.09	0.53	0.53	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	1885	1437	1810	1487	291	0	261	1508	0	84	1503
Grp Volume(v), veh/h	55	427	35	33	0	422	61	0	45	166	0	49
Grp Sat Flow(s),veh/h/ln	1781	1885	1437	1810	0	1778	261	0	1508	84	0	1503
Q Serve(g_s), s	2.7	19.0	1.6	1.6	0.0	19.1	0.0	0.0	2.0	0.0	0.0	2.2
Cycle Q Clear(g_c), s	2.7	19.0	1.6	1.6	0.0	19.1	24.0	0.0	2.0	24.0	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.16	0.38		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	104	527	402	79	0	471	125	0	402	88	0	401
V/C Ratio(X)	0.53	0.81	0.09	0.42	0.00	0.90	0.49	0.00	0.11	1.88	0.00	0.12
Avail Cap(c_a), veh/h	218	901	687	221	0	849	125	0	402	88	0	401
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.00	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	30.2	23.9	40.0	0.0	20.0	27.4	0.0	24.9	39.1	0.0	25.0
Incr Delay (d2), s/veh	1.6	3.1	0.1	1.2	0.0	21.3	3.0	0.0	0.1	435.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.8	0.6	0.7	0.0	7.7	1.1	0.0	0.7	12.6	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	33.3	24.0	41.2	0.0	41.3	30.3	0.0	25.1	474.2	0.0	25.2
LnGrp LOS	D	C	C	D	A	D	C	A	C	F	A	C
Approach Vol, veh/h	517		455			106			215			
Approach Delay, s/veh	33.6		41.3			28.1			371.9			
Approach LOS	C		D			C			F			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.9	29.1	28.0		9.2	27.8	28.0					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	1.0	43.0	24.0		11.0	43.0	24.0					
Max Q Clear Time (g_c+13.6)	1.0	21.0	26.0		4.7	21.1	26.0					
Green Ext Time (p_c), s	0.0	2.8	0.0		0.0	2.7	0.0					
Intersection Summary												
HCM 6th Ctrl Delay			92.1									
HCM 6th LOS			F									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	427	50	53	368	39	52	85	20	33	99	22
Future Volume (veh/h)	29	427	50	53	368	39	52	85	20	33	99	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.97		0.93	0.96		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1870	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	31	449	53	56	387	41	55	89	21	35	104	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	2	0	2	0	0	0	0	0	0	0
Cap, veh/h	43	808	95	72	841	89	289	332	78	302	335	74
Arrive On Green	0.02	0.49	0.49	0.04	0.51	0.51	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	1639	193	1810	1650	175	1241	1463	345	1258	1480	327
Grp Volume(v), veh/h	31	0	502	56	0	428	55	0	110	35	0	127
Grp Sat Flow(s), veh/h/ln	1810	0	1832	1810	0	1825	1241	0	1809	1258	0	1807
Q Serve(g_s), s	1.5	0.0	17.2	2.8	0.0	13.5	3.5	0.0	4.5	2.1	0.0	5.3
Cycle Q Clear(g_c), s	1.5	0.0	17.2	2.8	0.0	13.5	8.7	0.0	4.5	6.6	0.0	5.3
Prop In Lane	1.00		0.11	1.00		0.10	1.00		0.19	1.00		0.18
Lane Grp Cap(c), veh/h	43	0	904	72	0	930	289	0	410	302	0	410
V/C Ratio(X)	0.71	0.00	0.56	0.77	0.00	0.46	0.19	0.00	0.27	0.12	0.00	0.31
Avail Cap(c_a), veh/h	217	0	904	237	0	930	289	0	410	302	0	410
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.00	0.96	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	0.0	15.9	42.8	0.0	14.1	32.6	0.0	28.7	31.4	0.0	28.9
Incr Delay (d2), s/veh	7.6	0.0	2.4	6.4	0.0	1.6	1.5	0.0	1.6	0.8	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.3	1.3	0.0	5.7	1.1	0.0	2.1	0.7	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	0.0	18.3	49.2	0.0	15.8	34.0	0.0	30.3	32.2	0.0	30.9
LnGrp LOS	D	A	B	D	A	B	C	A	C	C	A	C
Approach Vol, veh/h	533			484			165			162		
Approach Delay, s/veh	20.2			19.7			31.5			31.2		
Approach LOS	C			B			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	49.0		25.3	6.4	50.4		25.3				
Change Period (Y+Rc), s	4.2	4.6		4.9	* 4.2	4.6		* 4.9				
Max Green Setting (Gmax), s	18	44.4		20.1	* 11	45.4		* 20				
Max Q Clear Time (g_c+14, s)	14.8	19.2		10.7	3.5	15.5		8.6				
Green Ext Time (p_c), s	0.0	4.9		0.3	0.0	4.2		0.4				

Intersection Summary

HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	281	29	430	308	0	387
Future Volume (veh/h)	281	29	430	308	0	387
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1870	0	1885
Adj Flow Rate, veh/h	290	0	443	0	0	399
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	1	2	0	1
Cap, veh/h	335		1056		0	2006
Arrive On Green	0.19	0.00	0.56	0.00	0.00	0.56
Sat Flow, veh/h	1795	1610	1885	1585	0	3770
Grp Volume(v), veh/h	290	0	443	0	0	399
Grp Sat Flow(s), veh/h/ln	1795	1610	1885	1585	0	1791
Q Serve(g_s), s	14.1	0.0	12.2	0.0	0.0	5.0
Cycle Q Clear(g_c), s	14.1	0.0	12.2	0.0	0.0	5.0
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	335		1056		0	2006
V/C Ratio(X)	0.86		0.42		0.00	0.20
Avail Cap(c_a), veh/h	606		1056		0	2006
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.91	0.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	11.4	0.0	0.0	9.8
Incr Delay (d2), s/veh	6.7	0.0	1.1	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	6.6	0.0	5.0	0.0	0.0	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	42.1	0.0	12.5	0.0	0.0	10.0
LnGrp LOS	D		B		A	B
Approach Vol, veh/h	290		443			399
Approach Delay, s/veh	42.1		12.5			10.0
Approach LOS	D		B			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	55.0		55.0		21.4	
Change Period (Y+Rc), s	4.6		4.6		4.6	
Max Green Setting (Gmax), s	23.4		50.4		30.4	
Max Q Clear Time (g_c+I1), s	14.2		7.0		16.1	
Green Ext Time (p_c), s	1.9		2.9		0.7	

Intersection Summary

HCM 6th Ctrl Delay 19.2

HCM 6th LOS B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

EX_PM
21: Ocean St & Broadway

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	303	26	66	258	54	8	277	87	110	493	175
Future Volume (veh/h)	165	303	26	66	258	54	8	277	87	110	493	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.94	0.99		0.94	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1841	1900	1885	1870	1900	1900	1900	1900	1885	1900
Adj Flow Rate, veh/h	176	322	28	70	274	57	9	295	93	117	524	186
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	1	4	0	1	2	0	0	0	0	1	0
Cap, veh/h	207	451	39	90	300	62	65	1974	881	268	1151	404
Arrive On Green	0.11	0.27	0.27	0.05	0.20	0.20	0.58	0.58	0.58	1.00	1.00	1.00
Sat Flow, veh/h	1810	1702	148	1810	1496	311	56	3400	1517	392	1983	696
Grp Volume(v), veh/h	176	0	350	70	0	331	161	143	93	415	0	412
Grp Sat Flow(s), veh/h/ln	1810	0	1850	1810	0	1808	1813	1643	1517	1531	0	1540
Q Serve(g_s), s	11.0	0.0	19.7	4.4	0.0	20.6	0.0	4.6	3.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	19.7	4.4	0.0	20.6	4.5	4.6	3.1	0.0	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.17	0.06		1.00	0.28		0.45
Lane Grp Cap(c), veh/h	207	0	491	90	0	363	1086	954	881	929	0	894
V/C Ratio(X)	0.85	0.00	0.71	0.78	0.00	0.91	0.15	0.15	0.11	0.45	0.00	0.46
Avail Cap(c_a), veh/h	283	0	547	142	0	393	1086	954	881	929	0	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.93	0.00	0.93
Uniform Delay (d), s/veh	49.9	0.0	38.3	54.0	0.0	45.0	11.1	11.1	10.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	16.1	0.0	3.9	13.2	0.0	24.2	0.3	0.3	0.2	1.4	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	9.4	2.3	0.0	11.6	1.9	1.7	1.1	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	0.0	42.2	67.2	0.0	69.2	11.3	11.4	11.0	1.4	0.0	1.6
LnGrp LOS	E	A	D	E	A	E	B	B	B	A	A	A
Approach Vol, veh/h	526			401			397			827		
Approach Delay, s/veh	50.1			68.8			11.3			1.5		
Approach LOS	D			E			B			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	34.5		70.8	17.2	27.1		70.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	9.0	34.0		60.0	18.0	25.0		60.0				
Max Q Clear Time (g_c+16.4)	16.4	21.7		6.6	13.0	22.6		2.0				
Green Ext Time (p_c), s	0.0	1.7		2.3	0.2	0.5		7.1				
Intersection Summary												
HCM 6th Ctrl Delay				27.8								
HCM 6th LOS				C								

EX_PM
22: Riverside Ave/Dakota Ave & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (veh/h)	21	603	4	6	308	14	23	8	21	17	3	34
Future Volume (veh/h)	21	603	4	6	308	14	23	8	21	17	3	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.94	0.99		0.94	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1870	1796	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	22	641	4	6	328	15	24	9	22	18	3	36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	1	0	0	2	7	0	0	0	0	0	0
Cap, veh/h	80	2091	13	54	2015	91	233	96	181	171	50	288
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	63	3459	21	21	3334	151	597	327	616	404	169	982
Grp Volume(v), veh/h	346	0	321	183	0	166	55	0	0	57	0	0
Grp Sat Flow(s),veh/h/ln	1833	0	1710	1841	0	1664	1540	0	0	1555	0	0
Q Serve(g_s), s	0.0	0.0	8.2	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	8.2	3.9	0.0	3.9	2.1	0.0	0.0	2.2	0.0	0.0
Prop In Lane	0.06		0.01	0.03		0.09	0.44		0.40	0.32		0.63
Lane Grp Cap(c), veh/h	1151	0	1034	1154	0	1006	509	0	0	509	0	0
V/C Ratio(X)	0.30	0.00	0.31	0.16	0.00	0.16	0.11	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	1151	0	1034	1154	0	1006	509	0	0	509	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.98	0.00	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	8.7	7.8	0.0	7.8	23.2	0.0	0.0	23.3	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.8	0.3	0.0	0.3	0.4	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	3.0	1.5	0.0	1.4	0.9	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	0.0	9.5	8.1	0.0	8.2	23.6	0.0	0.0	23.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h	667		349			55			57			
Approach Delay, s/veh	9.4		8.1			23.6			23.7			
Approach LOS	A		A			C			C			
Timer - Assigned Phs	2		4			6			8			
Phs Duration (G+Y+Rc), s	59.0		31.0			59.0			31.0			
Change Period (Y+Rc), s	4.6		4.6			4.6			4.6			
Max Green Setting (Gmax), s	54.4		26.4			28.4			26.4			
Max Q Clear Time (g_c+I1), s	10.2		4.1			5.9			4.2			
Green Ext Time (p_c), s	4.8		0.2			2.0			0.2			
Intersection Summary												
HCM 6th Ctrl Delay	10.4											
HCM 6th LOS	B											

EX_PM
23: Ocean St & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	289	121	78	231	89	33	373	111	236	611	136
Future Volume (veh/h)	72	289	121	78	231	89	33	373	111	236	611	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1900	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	75	301	126	81	241	93	34	389	116	246	636	142
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0	1	1	1
Cap, veh/h	96	553	225	103	823	353	52	1713	760	109	1828	795
Arrive On Green	0.05	0.23	0.23	0.06	0.23	0.23	0.06	0.96	0.96	0.06	0.51	0.51
Sat Flow, veh/h	1795	2446	994	1810	3582	1537	1810	3582	1590	1795	3582	1557
Grp Volume(v), veh/h	75	218	209	81	241	93	34	389	116	246	636	142
Grp Sat Flow(s),veh/h/ln	1795	1791	1649	1810	1791	1537	1810	1791	1590	1795	1791	1557
Q Serve(g_s), s	4.7	12.3	12.9	5.1	6.4	5.7	2.1	0.7	0.4	7.0	12.2	5.6
Cycle Q Clear(g_c), s	4.7	12.3	12.9	5.1	6.4	5.7	2.1	0.7	0.4	7.0	12.2	5.6
Prop In Lane	1.00		0.60	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	405	373	103	823	353	52	1713	760	109	1828	795
V/C Ratio(X)	0.78	0.54	0.56	0.78	0.29	0.26	0.65	0.23	0.15	2.25	0.35	0.18
Avail Cap(c_a), veh/h	187	405	373	173	823	353	535	1713	760	109	1828	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.86	0.86	0.86	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	39.2	39.4	53.5	36.6	36.3	53.6	1.3	1.3	54.0	16.8	15.2
Incr Delay (d2), s/veh	4.8	4.8	5.7	4.2	0.8	1.6	4.7	0.3	0.4	591.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.0	5.8	2.4	2.9	2.3	1.0	0.3	0.2	21.1	5.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.6	44.0	45.1	57.7	37.4	37.9	58.4	1.6	1.7	645.2	17.3	15.7
LnGrp LOS	E	D	D	E	D	D	E	A	A	F	B	B
Approach Vol, veh/h	502					415		539		1024		
Approach Delay, s/veh	46.7					41.4		5.2		167.9		
Approach LOS	D					D		A		F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	11.0	59.0	10.2	30.4	7.3	62.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	26.0	7.0	55.0	12.0	25.0	34.0	28.0					
Max Q Clear Time (g_c+11), s	14.9	9.0	2.7	6.7	8.4	4.1	14.2					
Green Ext Time (p_c), s	0.0	1.9	0.0	3.3	0.0	1.6	0.0	4.1				
Intersection Summary												
HCM 6th Ctrl Delay	86.8											
HCM 6th LOS	F											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	↔
Traffic Volume (veh/h)	73	607	55	69	322	14	33	93	43	47	158	85
Future Volume (veh/h)	73	607	55	69	322	14	33	93	43	47	158	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.88	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1870	1885	1870
Adj Flow Rate, veh/h	74	613	56	70	325	14	33	94	43	47	160	86
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	2	1	2
Cap, veh/h	171	1485	142	129	629	28	57	134	52	86	235	287
Arrive On Green	0.49	0.49	0.49	0.21	0.21	0.21	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	350	3034	291	600	2934	131	97	707	272	244	1244	1516
Grp Volume(v), veh/h	395	0	348	215	0	194	170	0	0	207	0	86
Grp Sat Flow(s),veh/h/ln	1868	0	1807	1840	0	1825	1077	0	0	1487	0	1516
Q Serve(g_s), s	15.3	0.0	13.6	11.6	0.0	10.5	4.0	0.0	0.0	0.0	0.0	5.5
Cycle Q Clear(g_c), s	15.3	0.0	13.6	11.6	0.0	10.5	18.5	0.0	0.0	14.6	0.0	5.5
Prop In Lane	0.19		0.16	0.33		0.07	0.19		0.25	0.23		1.00
Lane Grp Cap(c), veh/h	914	0	884	394	0	391	242	0	0	321	0	287
V/C Ratio(X)	0.43	0.00	0.39	0.54	0.00	0.50	0.70	0.00	0.00	0.65	0.00	0.30
Avail Cap(c_a), veh/h	914	0	884	394	0	391	382	0	0	469	0	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.00	0.13	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	18.1	39.1	0.0	38.7	43.0	0.0	0.0	42.2	0.0	39.0
Incr Delay (d2), s/veh	0.2	0.0	0.2	5.3	0.0	4.5	3.7	0.0	0.0	2.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	5.6	5.8	0.0	5.2	4.9	0.0	0.0	5.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	18.3	44.5	0.0	43.1	46.7	0.0	0.0	44.3	0.0	39.6
LnGrp LOS	B	A	B	D	A	D	D	A	A	D	A	D
Approach Vol, veh/h	743					409		170		293		
Approach Delay, s/veh	18.5					43.8		46.7		43.0		
Approach LOS	B					D		D		D		
Timer - Assigned Phs	2		4			6		8				
Phs Duration (G+Y+Rc), s	58.8		25.2			28.0		25.2				
Change Period (Y+Rc), s	4.0		4.0			4.0		4.0				
Max Green Setting (Gmax), s	45.0		31.0			24.0		31.0				
Max Q Clear Time (g_c+I1), s	17.3		16.6			13.6		20.5				
Green Ext Time (p_c), s	5.1		1.2			1.7		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			32.3									
HCM 6th LOS			C									

EX_PM
25: Seabright Ave & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	652	87	124	340	9	144	26	130	70	64	67
Future Volume (veh/h)	16	652	87	124	340	9	144	26	130	70	64	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.90	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1870	1885	1900	1885	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	17	679	91	129	354	9	150	27	135	73	67	70
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0	2	1	0	1	0	0	0	2	0
Cap, veh/h	20	1237	166	157	860	22	303	55	286	161	148	256
Arrive On Green	0.01	0.39	0.39	0.09	0.47	0.47	0.20	0.20	0.20	0.17	0.17	0.17
Sat Flow, veh/h	1810	3141	420	1781	1827	46	1545	278	1457	950	872	1511
Grp Volume(v), veh/h	17	387	383	129	0	363	177	0	135	140	0	70
Grp Sat Flow(s), veh/h/ln	1810	1791	1771	1781	0	1873	1823	0	1457	1823	0	1511
Q Serve(g_s), s	1.1	18.7	18.8	8.0	0.0	14.2	9.7	0.0	9.2	7.7	0.0	4.5
Cycle Q Clear(g_c), s	1.1	18.7	18.8	8.0	0.0	14.2	9.7	0.0	9.2	7.7	0.0	4.5
Prop In Lane	1.00		0.24	1.00		0.02	0.85		1.00	0.52		1.00
Lane Grp Cap(c), veh/h	20	705	697	157	0	882	358	0	286	309	0	256
V/C Ratio(X)	0.84	0.55	0.55	0.82	0.00	0.41	0.49	0.00	0.47	0.45	0.00	0.27
Avail Cap(c_a), veh/h	113	705	697	223	0	882	358	0	286	309	0	256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	26.2	26.3	50.2	0.0	19.4	40.0	0.0	39.9	41.8	0.0	40.5
Incr Delay (d2), s/veh	56.2	3.1	3.1	15.0	0.0	1.4	4.8	0.0	5.5	4.7	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.5	8.4	4.2	0.0	6.5	4.8	0.0	3.7	3.9	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.5	29.3	29.4	65.1	0.0	20.9	44.9	0.0	45.3	46.5	0.0	43.1
LnGrp LOS	F	C	C	E	A	C	D	A	D	D	A	D
Approach Vol, veh/h	787			492			312			210		
Approach Delay, s/veh	31.1			32.5			45.1			45.4		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.9	49.1		26.0	5.3	57.7		23.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	40.0	40.0		22.0	7.0	47.0		19.0				
Max Q Clear Time (g_c+I10), s	20.8	20.8		11.7	3.1	16.2		9.7				
Green Ext Time (p_c), s	0.1	4.8		1.1	0.0	2.4		0.6				

Intersection Summary

HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

EX_PM
26: Morrissey Blvd & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	👉👉	👉👉		👉	👉👉		👉	👉		👉	👉	👉
Traffic Volume (veh/h)	259	1119	18	27	650	198	9	57	12	280	141	456
Future Volume (veh/h)	259	1119	18	27	650	198	9	57	12	280	141	456
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1870	1885	1900	1826	1530	1885	1870	1870
Adj Flow Rate, veh/h	267	1154	19	28	670	0	9	59	12	289	145	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	0	0	2	1	0	5	25	1	2	2
Cap, veh/h	336	2178	36	47	1896		318	387	79	375	492	
Arrive On Green	0.10	0.60	0.60	0.03	0.53	0.00	0.26	0.26	0.26	0.26	0.26	0.00
Sat Flow, veh/h	3483	3606	59	1810	3647	0	1263	1473	299	1340	1870	1585
Grp Volume(v), veh/h	267	573	600	28	670	0	9	0	71	289	145	0
Grp Sat Flow(s), veh/h/ln	1742	1791	1874	1810	1777	0	1263	0	1772	1340	1870	1585
Q Serve(g_s), s	8.4	20.9	20.9	1.7	12.1	0.0	0.6	0.0	3.4	23.7	6.9	0.0
Cycle Q Clear(g_c), s	8.4	20.9	20.9	1.7	12.1	0.0	7.6	0.0	3.4	27.1	6.9	0.0
Prop In Lane	1.00		0.03	1.00		0.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	336	1082	1132	47	1896		318	0	466	375	492	
V/C Ratio(X)	0.79	0.53	0.53	0.60	0.35		0.03	0.00	0.15	0.77	0.29	
Avail Cap(c_a), veh/h	746	1082	1132	178	1896		347	0	506	406	534	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.97	0.97	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.5	12.9	12.9	54.0	15.0	0.0	36.0	0.0	31.7	42.1	33.0	0.0
Incr Delay (d2), s/veh	1.6	1.9	1.8	4.3	0.5	0.0	0.0	0.0	0.2	7.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.5	8.9	0.8	4.9	0.0	0.2	0.0	1.5	8.5	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	14.8	14.7	58.3	15.5	0.0	36.1	0.0	31.8	49.2	33.1	0.0
LnGrp LOS	D	B	B	E	B		D	A	C	D	C	
Approach Vol, veh/h	1440			698			80			434		
Approach Delay, s/veh	21.5			17.2			32.3			43.8		
Approach LOS	C			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	71.7		33.4	14.8	63.7		33.4				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	1.0	57.0		32.0	24.0	44.0		32.0				
Max Q Clear Time (g_c+13, s)	13.3	22.9		29.1	10.4	14.1		9.6				
Green Ext Time (p_c), s	0.0	9.9		0.3	0.4	5.1		0.3				

Intersection Summary

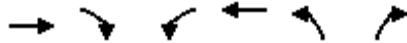
HCM 6th Ctrl Delay 24.3
HCM 6th LOS C

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

EX_PM
27: Frederick St & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (veh/h)	1343	50	152	784	50	303
Future Volume (veh/h)	1343	50	152	784	50	303
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1870	1900	1870	1900	1885
Adj Flow Rate, veh/h	1370	51	155	800	51	309
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	2	0	2	0	1
Cap, veh/h	2154	80	184	2665	323	285
Arrive On Green	0.41	0.41	0.10	0.75	0.18	0.18
Sat Flow, veh/h	3609	131	1810	3647	1810	1598
Grp Volume(v), veh/h	697	724	155	800	51	309
Grp Sat Flow(s), veh/h/ln	1791	1855	1810	1777	1810	1598
Q Serve(g_s), s	34.7	34.9	9.4	8.1	2.7	20.0
Cycle Q Clear(g_c), s	34.7	34.9	9.4	8.1	2.7	20.0
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1097	1136	184	2665	323	285
V/C Ratio(X)	0.64	0.64	0.84	0.30	0.16	1.08
Avail Cap(c_a), veh/h	1097	1136	226	2665	323	285
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.94	0.94	1.00	1.00
Uniform Delay (d), s/veh	23.0	23.1	49.4	4.5	38.9	46.0
Incr Delay (d2), s/veh	2.2	2.1	16.8	0.1	1.0	77.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	16.8	5.1	2.5	1.3	14.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.2	25.2	66.2	4.6	39.9	123.2
LnGrp LOS	C	C	E	A	D	F
Approach Vol, veh/h	1421			955	360	
Approach Delay, s/veh	25.2			14.6	111.4	
Approach LOS	C			B	F	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	54.4	72.6		88.0	24.0	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	66.0	66.0		72.0	20.0	
Max Q Clear Time (g_c+I1), s	36.9	36.9		10.1	22.0	
Green Ext Time (p_c), s	0.1	12.5		6.9	0.0	
Intersection Summary						
HCM 6th Ctrl Delay			32.8			
HCM 6th LOS			C			

EX_PM
28: Hagemann Ave/Trevethan Ave & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1613	27	19	844	17	76	5	43	79	7	23
Future Volume (veh/h)	10	1613	27	19	844	17	76	5	43	79	7	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	10	1629	27	19	853	17	77	5	43	80	7	23
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	22	2373	39	36	2373	47	243	25	113	277	29	66
Arrive On Green	0.01	0.44	0.44	0.04	1.00	1.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1810	3603	60	1810	3560	71	889	118	528	1033	136	309
Grp Volume(v), veh/h	10	808	848	19	426	444	125	0	0	110	0	0
Grp Sat Flow(s), veh/h/ln	1810	1791	1871	1810	1777	1854	1536	0	0	1478	0	0
Q Serve(g_s), s	0.6	40.5	40.7	1.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	40.5	40.7	1.2	0.0	0.0	7.0	0.0	0.0	6.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.04	0.62		0.34	0.73		0.21
Lane Grp Cap(c), veh/h	22	1180	1233	36	1185	1236	381	0	0	372	0	0
V/C Ratio(X)	0.46	0.69	0.69	0.53	0.36	0.36	0.33	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	145	1180	1233	145	1185	1236	381	0	0	372	0	0
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.95	0.95	0.95	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	55.2	22.0	22.0	53.3	0.0	0.0	37.3	0.0	0.0	37.1	0.0	0.0
Incr Delay (d2), s/veh	10.4	2.3	2.2	10.9	0.8	0.8	2.3	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	18.7	19.6	0.6	0.3	0.3	3.1	0.0	0.0	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	24.3	24.3	64.1	0.8	0.8	39.6	0.0	0.0	39.1	0.0	0.0
LnGrp LOS	E	C	C	E	A	A	D	A	A	D	A	A
Approach Vol, veh/h	1666			889			125			110		
Approach Delay, s/veh	24.5			2.1			39.6			39.1		
Approach LOS	C			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	77.8		28.0	5.3	78.7		28.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	9.0	67.0		24.0	9.0	67.0		24.0				
Max Q Clear Time (g_c+I1), s	13.2	42.7		8.6	2.6	2.0		9.0				
Green Ext Time (p_c), s	0.0	14.1		0.3	0.0	6.8		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.6								
HCM 6th LOS				B								

EX_PM
29: Park Way & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1661	6	13	826	30	9	5	11	123	1	58
Future Volume (veh/h)	28	1661	6	13	826	30	9	5	11	123	1	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.95	0.97		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1870	1856	1900	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	29	1695	6	13	843	31	9	5	11	126	1	59
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	0	0	2	3	0	0	0	0	0	3
Cap, veh/h	81	2313	8	27	2118	78	112	68	107	198	3	68
Arrive On Green	0.09	1.00	1.00	0.01	0.61	0.61	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1810	3631	13	1810	3489	128	459	456	719	972	21	461
Grp Volume(v), veh/h	29	829	872	13	429	445	25	0	0	186	0	0
Grp Sat Flow(s), veh/h/ln	1810	1777	1867	1810	1777	1840	1633	0	0	1453	0	0
Q Serve(g_s), s	1.7	0.0	0.0	0.8	14.0	14.0	0.0	0.0	0.0	12.5	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	0.8	14.0	14.0	1.4	0.0	0.0	13.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.07	0.36		0.44	0.68		0.32
Lane Grp Cap(c), veh/h	81	1132	1189	27	1079	1117	286	0	0	269	0	0
V/C Ratio(X)	0.36	0.73	0.73	0.48	0.40	0.40	0.09	0.00	0.00	0.69	0.00	0.00
Avail Cap(c_a), veh/h	178	1132	1189	178	1079	1117	345	0	0	325	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	0.92	0.92	0.92	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	49.5	0.0	0.0	54.7	11.4	11.4	41.2	0.0	0.0	46.4	0.0	0.0
Incr Delay (d2), s/veh	0.7	2.8	2.7	4.5	1.0	1.0	0.1	0.0	0.0	4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.9	0.9	0.4	5.6	5.8	0.6	0.0	0.0	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.1	2.8	2.7	59.3	12.4	12.4	41.4	0.0	0.0	51.1	0.0	0.0
LnGrp LOS	D	A	A	E	B	B	D	A	A	D	A	A
Approach Vol, veh/h	1730			887			25			186		
Approach Delay, s/veh	3.5			13.1			41.4			51.1		
Approach LOS	A			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	75.3		20.6	9.0	72.0		20.6				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	1.0	68.0		21.0	11.0	68.0		21.0				
Max Q Clear Time (g_c+I2), s	1.0	2.0		3.4	3.7	16.0		15.9				
Green Ext Time (p_c), s	0.0	23.0		0.1	0.0	6.8		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				10.0								
HCM 6th LOS				A								

EX_PM
30: Capitola Rd/Driveway & Soquel Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	799	1024	65	389	46	485	13	43	48	40	14
Future Volume (veh/h)	8	799	1024	65	389	46	485	13	43	48	40	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1885	1870	1870	1900	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	8	815	0	66	397	47	504	0	0	49	41	14
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	1	2	2	0	1	0	0	0	0	0
Cap, veh/h	18	2046		85	1955	230	588	0		71	59	108
Arrive On Green	0.01	0.58	0.00	0.05	0.61	0.61	0.16	0.00	0.00	0.07	0.07	0.07
Sat Flow, veh/h	1810	3554	1598	1781	3187	374	3591	0	1610	1007	843	1541
Grp Volume(v), veh/h	8	815	0	66	220	224	504	0	0	90	0	14
Grp Sat Flow(s), veh/h/ln	1810	1777	1598	1781	1777	1785	1795	0	1610	1850	0	1541
Q Serve(g_s), s	0.5	14.1	0.0	4.1	6.1	6.2	15.3	0.0	0.0	5.3	0.0	1.0
Cycle Q Clear(g_c), s	0.5	14.1	0.0	4.1	6.1	6.2	15.3	0.0	0.0	5.3	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	0.54		1.00
Lane Grp Cap(c), veh/h	18	2046		85	1090	1095	588	0		130	0	108
V/C Ratio(X)	0.45	0.40		0.78	0.20	0.20	0.86	0.00		0.69	0.00	0.13
Avail Cap(c_a), veh/h	113	2046		191	1090	1095	1090	0		198	0	165
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.1	13.1	0.0	52.7	9.5	9.6	45.6	0.0	0.0	50.9	0.0	48.9
Incr Delay (d2), s/veh	4.6	0.4	0.0	5.6	0.4	0.4	1.4	0.0	0.0	2.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.6	0.0	2.0	2.4	2.5	6.9	0.0	0.0	2.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	13.5	0.0	58.4	10.0	10.0	47.0	0.0	0.0	53.4	0.0	49.1
LnGrp LOS	E	B		E	A	A	D	A		D	A	D
Approach Vol, veh/h	823			510			504			104		
Approach Delay, s/veh	13.9			16.2			47.0			52.8		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	68.5		11.8	5.1	72.7		22.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	2.0	38.0		12.0	7.0	43.0		34.0				
Max Q Clear Time (g_c+16, s)	16.1			7.3	2.5	8.2		17.3				
Green Ext Time (p_c), s	0.0	5.9		0.1	0.0	2.9		0.9				

Intersection Summary

HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

EX_PM
31: Morrissey Blvd & Fairmount Ave

EX_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	151	170	333	15	14	44	35	334	301	37	480	98
Future Volume (veh/h)	151	170	333	15	14	44	35	334	301	37	480	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1796	1411	1900	1885	1885	1856	1885	1870
Adj Flow Rate, veh/h	156	175	343	15	14	45	36	344	310	38	495	101
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	1	0	7	33	0	1	1	3	1	2
Cap, veh/h	231	260	423	95	88	123	94	479	425	96	797	162
Arrive On Green	0.26	0.26	0.26	0.10	0.10	0.10	0.05	0.27	0.27	0.05	0.27	0.27
Sat Flow, veh/h	875	981	1598	906	845	1178	1810	1797	1593	1767	2966	602
Grp Volume(v), veh/h	331	0	343	29	0	45	36	343	311	38	298	298
Grp Sat Flow(s), veh/h/ln	1856	0	1598	1751	0	1178	1810	1791	1598	1767	1791	1777
Q Serve(g_s), s	9.9	0.0	12.5	0.9	0.0	2.2	1.2	10.8	11.0	1.3	9.0	9.1
Cycle Q Clear(g_c), s	9.9	0.0	12.5	0.9	0.0	2.2	1.2	10.8	11.0	1.3	9.0	9.1
Prop In Lane	0.47		1.00	0.52		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	491	0	423	183	0	123	94	478	426	96	481	478
V/C Ratio(X)	0.67	0.00	0.81	0.16	0.00	0.37	0.38	0.72	0.73	0.40	0.62	0.62
Avail Cap(c_a), veh/h	599	0	516	424	0	285	599	1012	903	428	1142	1133
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	0.0	21.3	25.3	0.0	25.8	28.4	20.6	20.7	28.3	19.9	19.9
Incr Delay (d2), s/veh	2.5	0.0	8.4	0.4	0.0	1.8	0.9	1.5	1.8	1.0	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	5.3	0.4	0.0	0.6	0.5	4.3	4.0	0.5	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	0.0	29.8	25.7	0.0	27.6	29.3	22.1	22.5	29.3	20.8	20.9
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	C	C
Approach Vol, veh/h	674			74			690			634		
Approach Delay, s/veh	26.4			26.9			22.7			21.4		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	21.9		21.0	7.8	22.1		11.1				
Change Period (Y+Rc), s	4.6	* 5.4		4.6	4.6	5.4		4.6				
Max Green Setting (Gmax), s	5.0	* 35		20.0	20.5	39.5		15.0				
Max Q Clear Time (g_c+13), s	13.0	13.0		14.5	3.2	11.1		4.2				
Green Ext Time (p_c), s	0.0	3.5		1.9	0.0	3.2		0.1				

Intersection Summary

HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 12.3

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	327	22	39	68	2	89	29	40	1	17	13
Future Vol, veh/h	37	327	22	39	68	2	89	29	40	1	17	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	2	5	3	0	0	1	0	0	0	0	0
Mvmt Flow	40	352	24	42	73	2	96	31	43	1	18	14
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	14.2	9.7	10.1	8.6
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	56%	10%	0%	36%	0%	3%
Vol Thru, %	18%	90%	0%	64%	0%	55%
Vol Right, %	25%	0%	100%	0%	100%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	364	22	107	2	31
LT Vol	89	37	0	39	0	1
Through Vol	29	327	0	68	0	17
RT Vol	40	0	22	0	2	13
Lane Flow Rate	170	391	24	115	2	33
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.248	0.566	0.029	0.181	0.003	0.049
Departure Headway (Hd)	5.263	5.203	4.481	5.678	4.735	5.267
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	678	689	792	626	747	672
Service Time	3.332	2.97	2.248	3.466	2.522	3.362
HCM Lane V/C Ratio	0.251	0.567	0.03	0.184	0.003	0.049
HCM Control Delay	10.1	14.6	7.4	9.7	7.5	8.6
HCM Lane LOS	B	B	A	A	A	A
HCM 95th-tile Q	1	3.6	0.1	0.7	0	0.2

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	84	67	502	62	30	150
Future Vol, veh/h	84	67	502	62	30	150
Conflicting Peds, #/hr	7	1	0	43	43	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	3	2	0	0	4
Mvmt Flow	90	72	540	67	32	161
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	849	618	0	0	650	0
Stage 1	617	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.42	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	331	487	-	-	946	-
Stage 1	538	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	305	469	-	-	912	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	771	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.3	0	1.5			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 305 469	912	-		
HCM Lane V/C Ratio	-	- 0.296 0.154	0.035	-		
HCM Control Delay (s)	-	- 21.7 14.1	9.1	0		
HCM Lane LOS	-	- C B	A	A		
HCM 95th %tile Q(veh)	-	- 1.2 0.5	0.1	-		

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑			↑↑
Traffic Vol, veh/h	58	15	550	0	0	234
Future Vol, veh/h	58	15	550	0	0	234
Conflicting Peds, #/hr	22	0	0	54	54	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	63	16	598	0	0	254
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	747	598	0	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.6	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	368	506	-	0	0	-
Stage 1	553	-	-	0	0	-
Stage 2	869	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	361	506	-	-	-	-
Mov Cap-2 Maneuver	361	-	-	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.8	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 384		-			
HCM Lane V/C Ratio	- 0.207		-			
HCM Control Delay (s)	- 16.8		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 0.8		-			

Appendix C

Analysis Worksheets for Existing (2023) Plus Approved Projects Conditions

Intersection

Int Delay, s/veh 1.3

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations						
Traffic Vol, veh/h	30	274	309	8	4	55
Future Vol, veh/h	30	274	309	8	4	55
Conflicting Peds, #/hr	7	0	0	7	4	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	3	6	13	0	11
Mvmt Flow	33	298	336	9	4	60

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	352	0	-	0	716	356
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	368	-
Critical Hdwy	4.17	-	-	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.263	-	-	-	3.5	3.399
Pot Cap-1 Maneuver	1180	-	-	-	400	668
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1173	-	-	-	384	660
Mov Cap-2 Maneuver	-	-	-	-	384	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	700	-

Approach EB WB SB

HCM Control Delay, s	0.8	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h)	1173	-	-	-	629
HCM Lane V/C Ratio	0.028	-	-	-	0.102
HCM Control Delay (s)	8.2	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	2	0	7	7	7	2	65	6	10	37	15
Future Vol, veh/h	4	2	0	7	7	7	2	65	6	10	37	15
Conflicting Peds, #/hr	7	0	9	9	0	7	29	0	7	7	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	20	0	29	0	6	0	20	16	0
Mvmt Flow	5	2	0	8	8	8	2	76	7	12	43	17
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	204	199	90	177	204	94	89	0	0	90	0	0
Stage 1	105	105	-	91	91	-	-	-	-	-	-	-
Stage 2	99	94	-	86	113	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.3	6.5	6.49	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.68	4	3.561	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	758	700	973	747	696	894	1519	-	-	1399	-	-
Stage 1	906	812	-	874	823	-	-	-	-	-	-	-
Stage 2	912	821	-	879	806	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	716	672	942	730	668	884	1482	-	-	1391	-	-
Mov Cap-2 Maneuver	716	672	-	730	668	-	-	-	-	-	-	-
Stage 1	883	785	-	868	817	-	-	-	-	-	-	-
Stage 2	888	815	-	862	779	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.2		10			0.2			1.2			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1482	-	-	701	750	1391	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.01	0.033	0.008	-	-				
HCM Control Delay (s)	7.4	0	-	10.2	10	7.6	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	5	7	1	0	7	0	300	6	35	323	18
Future Vol, veh/h	6	5	7	1	0	7	0	300	6	35	323	18
Conflicting Peds, #/hr	5	0	12	12	0	5	6	0	14	14	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	29	0	0	43	0	4	33	9	6	17
Mvmt Flow	7	6	8	1	0	8	0	337	7	39	363	20
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	807	815	391	825	822	360	389	0	0	358	0	0
Stage 1	457	457	-	355	355	-	-	-	-	-	-	-
Stage 2	350	358	-	470	467	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.49	7.1	6.5	6.63	4.1	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.561	3.5	4	3.687	2.2	-	-	2.281	-	-
Pot Cap-1 Maneuver	302	314	602	294	311	602	1181	-	-	1163	-	-
Stage 1	587	571	-	666	633	-	-	-	-	-	-	-
Stage 2	671	631	-	578	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	286	295	593	270	293	592	1175	-	-	1149	-	-
Mov Cap-2 Maneuver	286	295	-	270	293	-	-	-	-	-	-	-
Stage 1	584	544	-	658	625	-	-	-	-	-	-	-
Stage 2	659	623	-	535	538	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	15.5		12.1		0		0.8					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1175	-	-	362	515	1149	-	-				
HCM Lane V/C Ratio	-	-	-	0.056	0.017	0.034	-	-				
HCM Control Delay (s)	0	-	-	15.5	12.1	8.2	0	-				
HCM Lane LOS	A	-	-	C	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-				

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	316	20	0	415	29	0	0	10	0	1	26
Future Vol, veh/h	36	316	20	0	415	29	0	0	10	0	1	26
Conflicting Peds, #/hr	2	0	11	11	0	2	6	0	8	8	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	16	3	0	0	5	0	0	0	0	0	0	4
Mvmt Flow	40	355	22	0	466	33	0	0	11	0	1	29
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	501	0	0	-	-	0	-	-	385	-	953	491
Stage 1	-	-	-	-	-	-	-	-	-	-	485	-
Stage 2	-	-	-	-	-	-	-	-	-	-	468	-
Critical Hdwy	4.26	-	-	-	-	-	-	-	6.2	-	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	5.5	-
Follow-up Hdwy	2.344	-	-	-	-	-	-	-	3.3	-	4	3.336
Pot Cap-1 Maneuver	995	-	-	0	-	-	0	0	667	0	261	573
Stage 1	-	-	-	0	-	-	0	0	-	0	555	-
Stage 2	-	-	-	0	-	-	0	0	-	0	565	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	-	-	-	-	-	656	-	248	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	362	-
Stage 1	-	-	-	-	-	-	-	-	-	-	554	-
Stage 2	-	-	-	-	-	-	-	-	-	-	537	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0			10.6			11.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1					
Capacity (veh/h)	656	993	-	-	-	-	569					
HCM Lane V/C Ratio	0.017	0.041	-	-	-	-	0.051					
HCM Control Delay (s)	10.6	8.8	-	-	-	-	11.7					
HCM Lane LOS	B	A	-	-	-	-	B					
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-	-	0.2					

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	322	14	22	378	23	26	26	25	13	31	5
Future Volume (veh/h)	0	322	14	22	378	23	26	26	25	13	31	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.89		0.84	0.89		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1856	1900	1900	1856	1337	1841	1707	1781	1900	1559	1441
Adj Flow Rate, veh/h	0	346	15	24	406	25	28	28	27	14	33	5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	11	3	0	0	3	38	4	13	8	0	23	31
Cap, veh/h	2	830	36	73	962	59	315	136	132	98	187	25
Arrive On Green	0.00	0.47	0.47	0.04	0.56	0.56	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1654	1762	76	1810	1725	106	1194	726	700	249	992	132
Grp Volume(v), veh/h	0	0	361	24	0	431	28	0	55	52	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	1838	1810	0	1831	1194	0	1426	1373	0	0
Q Serve(g_s), s	0.0	0.0	11.6	1.2	0.0	12.2	0.0	0.0	2.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	11.6	1.2	0.0	12.2	1.3	0.0	2.9	2.6	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.49	0.27		0.10
Lane Grp Cap(c), veh/h	2	0	866	73	0	1022	315	0	268	309	0	0
V/C Ratio(X)	0.00	0.00	0.42	0.33	0.00	0.42	0.09	0.00	0.21	0.17	0.00	0.00
Avail Cap(c_a), veh/h	199	0	866	217	0	1022	409	0	380	412	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.95	0.00	0.95	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	15.7	42.0	0.0	11.5	30.2	0.0	30.9	30.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.5	0.9	0.0	1.2	0.1	0.0	0.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	5.0	0.5	0.0	4.9	0.5	0.0	1.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	17.1	43.0	0.0	12.7	30.3	0.0	31.2	31.0	0.0	0.0
LnGrp LOS	A	A	B	D	A	B	C	A	C	C	A	A
Approach Vol, veh/h		361			455			83			52	
Approach Delay, s/veh		17.1			14.3			30.9			31.0	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	54.8		20.9	7.8	47.0		20.9				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 11	42.4		24.0	* 11	42.4		24.0				
Max Q Clear Time (g_c+I1), s	0.0	14.2		4.6	3.2	13.6		4.9				
Green Ext Time (p_c), s	0.0	2.9		0.2	0.0	2.3		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	285	17	240	363	121	5	113	190	37	144	64
Future Volume (veh/h)	87	285	17	240	363	121	5	113	190	37	144	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1841	1885	1885	1885	1885	1900	1737	1856	1826	1767
Adj Flow Rate, veh/h	96	313	19	264	399	133	5	124	209	41	158	70
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	1	4	1	1	1	1	0	11	3	5	9
Cap, veh/h	144	1121	68	196	669	567	19	324	251	101	396	325
Arrive On Green	0.03	0.11	0.11	0.11	0.35	0.35	0.01	0.17	0.17	0.06	0.22	0.22
Sat Flow, veh/h	1781	3431	207	1795	1885	1598	1795	1900	1472	1767	1826	1497
Grp Volume(v), veh/h	96	163	169	264	399	133	5	124	209	41	158	70
Grp Sat Flow(s),veh/h/ln	1781	1791	1848	1795	1885	1598	1795	1900	1472	1767	1826	1497
Q Serve(g_s), s	4.8	7.5	7.6	9.8	15.6	5.3	0.2	5.2	12.4	2.0	6.7	3.5
Cycle Q Clear(g_c), s	4.8	7.5	7.6	9.8	15.6	5.3	0.2	5.2	12.4	2.0	6.7	3.5
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	585	604	196	669	567	19	324	251	101	396	325
V/C Ratio(X)	0.67	0.28	0.28	1.35	0.60	0.23	0.27	0.38	0.83	0.41	0.40	0.22
Avail Cap(c_a), veh/h	372	585	604	196	669	567	176	515	399	173	495	406
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	30.4	30.4	40.1	23.8	20.4	44.2	33.1	36.1	41.0	30.2	28.9
Incr Delay (d2), s/veh	1.9	1.2	1.1	187.5	3.9	1.0	2.8	0.7	8.1	1.0	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	3.6	3.7	14.4	7.4	2.1	0.1	2.4	4.9	0.9	3.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	31.5	31.6	227.6	27.7	21.4	47.0	33.9	44.2	41.9	30.8	29.3
LnGrp LOS	D	C	C	F	C	C	D	C	D	D	C	C
Approach Vol, veh/h	428					796		338		269		
Approach Delay, s/veh	34.5					92.9		40.5		32.1		
Approach LOS	C					F		D		C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.5	36.5	5.1	24.1	14.0	34.0	9.3	20.0				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	19	20.4	* 8.8	24.4	* 9.8	29.4	* 8.8	24.4				
Max Q Clear Time (g_c+10), s	16.8	17.6	2.2	8.7	11.8	9.6	4.0	14.4				
Green Ext Time (p_c), s	0.1	0.8	0.0	0.9	0.0	1.8	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 8
Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	131	1	5	131	0	7	1	13	23	5	9
Future Vol, veh/h	0	131	1	5	131	0	7	1	13	23	5	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	9	0	0
Mvmt Flow	0	141	1	5	141	0	8	1	14	25	5	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8	8.1	7.5	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	33%	0%	4%	82%	0%
Vol Thru, %	5%	99%	96%	18%	0%
Vol Right, %	62%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	132	136	28	9
LT Vol	7	0	5	23	0
Through Vol	1	131	131	5	0
RT Vol	13	1	0	0	9
Lane Flow Rate	23	142	146	30	10
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.027	0.163	0.167	0.048	0.012
Departure Headway (Hd)	4.384	4.132	4.123	5.719	4.448
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	821	854	855	630	810
Service Time	2.385	2.225	2.216	3.42	2.148
HCM Lane V/C Ratio	0.028	0.166	0.171	0.048	0.012
HCM Control Delay	7.5	8	8.1	8.7	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.6	0.6	0.2	0

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	433	402	7	15	60
Future Vol, veh/h	62	433	402	7	15	60
Conflicting Peds, #/hr	7	0	0	7	4	17
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	10	2	2	0	0	8
Mvmt Flow	65	451	419	7	16	63
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	433	0	-	0	1015	447
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	585	-
Critical Hdwy	4.2	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.29	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1085	-	-	-	266	599
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1079	-	-	-	247	587
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	558	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.1	0		14.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1079	-	-	-	460	
HCM Lane V/C Ratio	0.06	-	-	-	0.17	
HCM Control Delay (s)	8.5	-	-	-	14.4	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	7	5	7	9	4	5	93	11	16	69	4
Future Vol, veh/h	5	7	5	7	9	4	5	93	11	16	69	4
Conflicting Peds, #/hr	28	0	8	8	0	28	52	0	10	10	0	52
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	7	0
Mvmt Flow	6	8	6	8	11	5	6	111	13	19	82	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	341	321	145	278	317	156	139	0	0	134	0	0
Stage 1	175	175	-	140	140	-	-	-	-	-	-	-
Stage 2	166	146	-	138	177	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	617	599	908	678	602	895	1457	-	-	1463	-	-
Stage 1	832	758	-	868	785	-	-	-	-	-	-	-
Stage 2	841	780	-	870	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	557	558	863	646	560	867	1394	-	-	1451	-	-
Mov Cap-2 Maneuver	557	558	-	646	560	-	-	-	-	-	-	-
Stage 1	792	716	-	857	775	-	-	-	-	-	-	-
Stage 2	802	770	-	836	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	10.9	0.3	1.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	622 634	1451	-	-
HCM Lane V/C Ratio	0.004	-	-	0.033 0.038	0.013	-	-
HCM Control Delay (s)	7.6	0	-	11 10.9	7.5	0	-
HCM Lane LOS	A	A	-	B B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1	0	-	-

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	12	3	3	0	4	4	426	10	48	446	19
Future Vol, veh/h	19	12	3	3	0	4	4	426	10	48	446	19
Conflicting Peds, #/hr	20	0	6	6	0	20	3	0	19	19	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	20	13	3	3	0	4	4	458	11	52	480	20
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1091	1093	499	1099	1098	503	503	0	0	488	0	0
Stage 1	597	597	-	491	491	-	-	-	-	-	-	-
Stage 2	494	496	-	608	607	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	194	216	576	192	215	573	1072	-	-	1086	-	-
Stage 1	493	495	-	563	552	-	-	-	-	-	-	-
Stage 2	561	549	-	486	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	178	197	572	168	196	555	1069	-	-	1069	-	-
Mov Cap-2 Maneuver	178	197	-	168	196	-	-	-	-	-	-	-
Stage 1	490	460	-	551	540	-	-	-	-	-	-	-
Stage 2	545	537	-	436	455	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	27.4		18.3		0.1		0.8					
HCM LOS	D		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1069	-	-	197	279	1069	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.186	0.027	0.048	-	-				
HCM Control Delay (s)	8.4	0	-	27.4	18.3	8.5	0	-				
HCM Lane LOS	A	A	-	D	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.7	0.1	0.2	-	-				

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	446	24	0	422	43	0	0	8	0	0	84
Future Vol, veh/h	62	446	24	0	422	43	0	0	8	0	0	84
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	64	460	25	0	435	44	0	0	8	0	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	500	0	0	-	-	0	-	-	517	-	-	481
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.2	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	1049	-	-	0	-	-	0	0	562	0	0	589
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1031	-	-	-	-	-	-	-	542	-	-	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	11.7	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	542	1031	-	-	-	-	577
HCM Lane V/C Ratio	0.015	0.062	-	-	-	-	0.15
HCM Control Delay (s)	11.7	8.7	-	-	-	-	12.3
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0	0.2	-	-	-	-	0.5

EX+AP_PM
5: Pacific Ave & Laurel St

EX+AP_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	442	18	25	404	44	27	64	32	45	49	15
Future Volume (veh/h)	18	442	18	25	404	44	27	64	32	45	49	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.80		0.69	0.81		0.68
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	19	456	19	26	416	45	28	66	33	46	51	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	53	886	37	76	849	92	288	214	107	134	131	33
Arrive On Green	0.03	0.50	0.50	0.04	0.51	0.51	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	1777	74	1810	1659	179	1092	984	492	372	602	151
Grp Volume(v), veh/h	19	0	475	26	0	461	28	0	99	112	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1851	1810	0	1838	1092	0	1476	1124	0	0
Q Serve(g_s), s	1.0	0.0	16.4	1.3	0.0	15.5	0.0	0.0	5.3	4.0	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	16.4	1.3	0.0	15.5	2.6	0.0	5.3	9.3	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.10	1.00		0.33	0.41		0.13
Lane Grp Cap(c), veh/h	53	0	923	76	0	941	288	0	321	298	0	0
V/C Ratio(X)	0.36	0.00	0.51	0.34	0.00	0.49	0.10	0.00	0.31	0.38	0.00	0.00
Avail Cap(c_a), veh/h	206	0	923	206	0	941	327	0	373	341	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.95	0.00	0.95	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.3	0.0	16.0	44.2	0.0	15.1	30.1	0.0	31.2	32.6	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	2.0	0.9	0.0	1.7	0.1	0.0	0.5	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	7.1	0.6	0.0	6.6	0.5	0.0	1.9	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	0.0	18.1	45.2	0.0	16.9	30.3	0.0	31.7	33.4	0.0	0.0
LnGrp LOS	D	A	B	D	A	B	C	A	C	C	A	A
Approach Vol, veh/h		494			487			127			112	
Approach Delay, s/veh		19.2			18.4			31.4			33.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	53.2		24.6	8.2	52.0		24.6				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 11	47.4		24.0	* 11	47.4		24.0				
Max Q Clear Time (g_c+I1), s	3.0	17.5		11.3	3.3	18.4		7.3				
Green Ext Time (p_c), s	0.0	3.2		0.5	0.0	3.3		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			21.4									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	511	15	193	331	118	10	174	278	73	267	122
Future Volume (veh/h)	127	511	15	193	331	118	10	174	278	73	267	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	131	527	15	199	341	122	10	179	287	75	275	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	165	1109	32	206	631	535	35	389	330	131	490	415
Arrive On Green	0.03	0.10	0.10	0.11	0.33	0.33	0.02	0.20	0.20	0.07	0.26	0.26
Sat Flow, veh/h	1810	3585	102	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	131	265	277	199	341	122	10	179	287	75	275	126
Grp Sat Flow(s),veh/h/ln	1810	1805	1882	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	6.8	13.2	13.2	10.4	13.9	5.2	0.5	7.9	16.4	3.8	11.9	6.0
Cycle Q Clear(g_c), s	6.8	13.2	13.2	10.4	13.9	5.2	0.5	7.9	16.4	3.8	11.9	6.0
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	559	582	206	631	535	35	389	330	131	490	415
V/C Ratio(X)	0.80	0.47	0.48	0.97	0.54	0.23	0.28	0.46	0.87	0.57	0.56	0.30
Avail Cap(c_a), veh/h	320	559	582	206	631	535	168	488	414	244	568	481
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	35.4	35.4	41.9	25.8	22.9	45.9	33.1	36.5	42.6	30.6	28.4
Incr Delay (d2), s/veh	3.1	2.7	2.6	52.9	3.3	1.0	1.6	0.8	15.1	1.5	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	6.8	7.0	7.6	6.7	2.1	0.2	3.7	7.7	1.7	5.5	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.3	38.1	38.0	94.9	29.1	23.9	47.5	34.0	51.6	44.1	31.6	28.8
LnGrp LOS	D	D	D	F	C	C	D	C	D	D	C	C
Approach Vol, veh/h	673				662		476				476	
Approach Delay, s/veh	40.0				47.9		44.9				32.8	
Approach LOS	D				D		D				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.8	36.2	6.1	29.1	15.0	34.0	11.1	24.1				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	13	23.4	* 8.8	28.4	* 11	29.4	* 13	24.4				
Max Q Clear Time (g_c+10), s	15.9	15.9	2.5	13.9	12.4	15.2	5.8	18.4				
Green Ext Time (p_c), s	0.1	1.5	0.0	1.7	0.0	2.8	0.0	1.1				

Intersection Summary

HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 8.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	164	2	14	147	0	10	0	11	21	15	29
Future Vol, veh/h	0	164	2	14	147	0	10	0	11	21	15	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	173	2	15	155	0	11	0	12	22	16	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.5	8.5	7.8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	48%	0%	9%	58%	0%
Vol Thru, %	0%	99%	91%	42%	0%
Vol Right, %	52%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	166	161	36	29
LT Vol	10	0	14	21	0
Through Vol	0	164	147	15	0
RT Vol	11	2	0	0	29
Lane Flow Rate	22	175	169	38	31
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.028	0.209	0.204	0.059	0.039
Departure Headway (Hd)	4.64	4.314	4.327	5.58	4.582
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	772	833	832	643	783
Service Time	2.665	2.329	2.341	3.302	2.303
HCM Lane V/C Ratio	0.028	0.21	0.203	0.059	0.04
HCM Control Delay	7.8	8.5	8.5	8.7	7.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.8	0.8	0.2	0.1

Appendix D

Analysis Worksheets for Existing (2023) Plus Approved Projects Plus Project Conditions

SITE LAYOUT

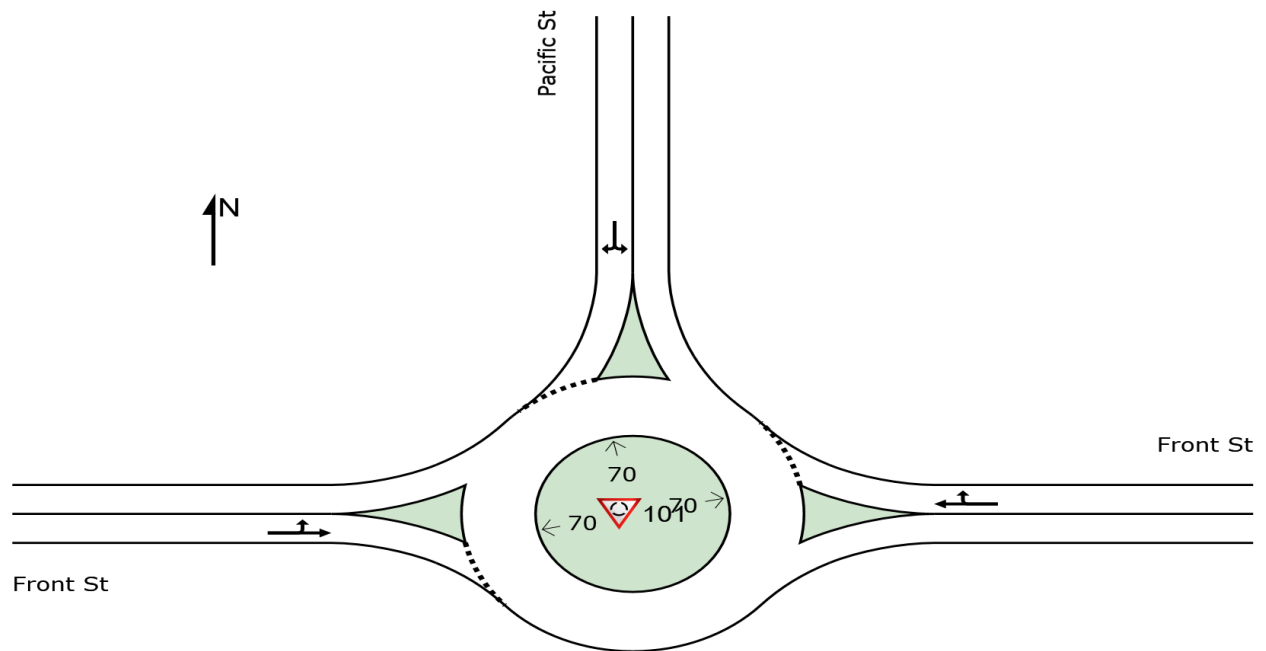
 Site: 101 [INT #1 Ex Plus Approved Projects Plus Project_AM
(Site Folder: Existing Plus Approved Plus Project)]

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 **Site: 101 [INT #1 Ex Plus Approved Projects Plus Project_AM
(Site Folder: Existing Plus Approved Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	363	3.0	363	3.0	1274	0.285	100	5.2	LOS A	1.6	40.5	Full	1600	0.0	0.0
Approach	363	3.0	363	3.0		0.285		5.2	LOS A	1.6	40.5				
North: Pacific St															
Lane 1 ^d	87	3.0	87	3.0	915	0.095	100	4.8	LOS A	0.4	9.9	Full	1600	0.0	0.0
Approach	87	3.0	87	3.0		0.095		4.8	LOS A	0.4	9.9				
West: Front St															
Lane 1 ^d	385	3.0	385	3.0	1327	0.290	100	4.6	LOS A	1.7	42.4	Full	1600	0.0	0.0
Approach	385	3.0	385	3.0		0.290		4.6	LOS A	1.7	42.4				
All Vehicles	835	3.0	835	3.0		0.290		4.9	LOS A	1.7	42.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From E To Exit:	W	N			Cap. veh/h	v/c	%	%	Lane No.	
Lane 1	354	9	363	3.0	1274	0.285	100	NA	NA	
Approach	354	9	363	3.0		0.285				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From N To Exit:	E	W			Cap. veh/h	v/c	%	%	Lane No.	
Lane 1	11	76	87	3.0	915	0.095	100	NA	NA	
Approach	11	76	87	3.0		0.095				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From W To Exit:	N	E			Cap. veh/h	v/c	%	%	Lane No.	

Lane 1	49	336	385	3.0	1327	0.290	100	NA	NA
Approach	49	336	385	3.0		0.290			
Total %HV Deg.Satn (v/c)									
All Vehicles	835	3.0		0.290					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	2	2	108	65	15
Future Vol, veh/h	4	2	2	108	65	15
Conflicting Peds, #/hr	7	9	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	6	16	0
Mvmt Flow	5	2	2	126	76	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	251	123	122	0	-	0
Stage 1	114	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	742	933	1478	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	706	904	1442	-	-	-
Mov Cap-2 Maneuver	706	-	-	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.8	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1442	-	762	-	-	
HCM Lane V/C Ratio	0.002	-	0.009	-	-	
HCM Control Delay (s)	7.5	0	9.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	354	20	0	513	29	0	0	10	0	1	26
Future Vol, veh/h	36	354	20	0	513	29	0	0	10	0	1	26
Conflicting Peds, #/hr	2	0	11	11	0	2	6	0	8	8	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	16	3	0	0	5	0	0	0	0	0	0	4
Mvmt Flow	40	398	22	0	576	33	0	0	11	0	1	29
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	611	0	0	-	-	0	-	-	428	-	1106	601
Stage 1	-	-	-	-	-	-	-	-	-	-	595	-
Stage 2	-	-	-	-	-	-	-	-	-	-	511	-
Critical Hdwy	4.26	-	-	-	-	-	-	-	6.2	-	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	5.5	-
Follow-up Hdwy	2.344	-	-	-	-	-	-	-	3.3	-	4	3.336
Pot Cap-1 Maneuver	903	-	-	0	-	-	0	0	631	0	212	497
Stage 1	-	-	-	0	-	-	0	0	-	0	496	-
Stage 2	-	-	-	0	-	-	0	0	-	0	540	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	901	-	-	-	-	-	-	-	621	-	201	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	321	-
Stage 1	-	-	-	-	-	-	-	-	-	-	495	-
Stage 2	-	-	-	-	-	-	-	-	-	-	511	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.8		0			10.9			12.7			
HCM LOS						B			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1					
Capacity (veh/h)	621	901	-	-	-	-	494					
HCM Lane V/C Ratio	0.018	0.045	-	-	-	-	0.059					
HCM Control Delay (s)	10.9	9.2	-	-	-	-	12.7					
HCM Lane LOS	B	A	-	-	-	-	B					
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-	-	0.2					

Ex+AP+P_AM
5: Pacific Ave & Laurel St

Ex+AP+P_AM
Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	371	25	35	442	23	57	26	52	13	31	5
Future Volume (veh/h)	0	371	25	35	442	23	57	26	52	13	31	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.89		0.84	0.90		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1856	1900	1900	1856	1337	1841	1707	1781	1900	1559	1441
Adj Flow Rate, veh/h	0	399	27	38	475	25	61	28	56	14	33	5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	11	3	0	0	3	38	4	13	8	0	23	31
Cap, veh/h	2	807	55	99	998	53	316	85	169	97	187	25
Arrive On Green	0.00	0.47	0.47	0.05	0.57	0.57	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1654	1713	116	1810	1743	92	1195	449	898	248	989	132
Grp Volume(v), veh/h	0	0	426	38	0	500	61	0	84	52	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	1829	1810	0	1835	1195	0	1347	1369	0	0
Q Serve(g_s), s	0.0	0.0	14.5	1.8	0.0	14.4	0.5	0.0	4.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	14.5	1.8	0.0	14.4	3.1	0.0	4.9	2.6	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.05	1.00		0.67	0.27		0.10
Lane Grp Cap(c), veh/h	2	0	862	99	0	1050	316	0	254	309	0	0
V/C Ratio(X)	0.00	0.00	0.49	0.39	0.00	0.48	0.19	0.00	0.33	0.17	0.00	0.00
Avail Cap(c_a), veh/h	199	0	862	217	0	1050	409	0	359	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.91	0.00	0.91	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	16.4	41.1	0.0	11.3	30.8	0.0	31.6	30.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.0	0.8	0.0	1.4	0.3	0.0	0.8	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	6.2	0.8	0.0	5.8	1.1	0.0	1.6	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	18.4	41.9	0.0	12.7	31.1	0.0	32.4	30.9	0.0	0.0
LnGrp LOS	A	A	B	D	A	B	C	A	C	C	A	A
Approach Vol, veh/h		426			538			145			52	
Approach Delay, s/veh		18.4			14.8			31.8			30.9	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	56.1		21.0	9.1	47.0		21.0				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 11	42.4		24.0	* 11	42.4		24.0				
Max Q Clear Time (g_c+I1), s	0.0	16.4		4.6	3.8	16.5		6.9				
Green Ext Time (p_c), s	0.0	3.4		0.2	0.0	2.8		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			19.0									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	324	42	284	385	121	54	165	336	37	164	74
Future Volume (veh/h)	100	324	42	284	385	121	54	165	336	37	164	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1885	1841	1885	1885	1885	1885	1900	1737	1856	1826	1767
Adj Flow Rate, veh/h	110	356	46	312	423	133	59	181	369	41	180	81
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	1	4	1	1	1	1	0	11	3	5	9
Cap, veh/h	148	1043	134	196	664	563	123	510	395	101	469	384
Arrive On Green	0.03	0.11	0.11	0.11	0.35	0.35	0.07	0.27	0.27	0.06	0.26	0.26
Sat Flow, veh/h	1781	3193	409	1795	1885	1598	1795	1900	1472	1767	1826	1497
Grp Volume(v), veh/h	110	198	204	312	423	133	59	181	369	41	180	81
Grp Sat Flow(s),veh/h/ln	1781	1791	1811	1795	1885	1598	1795	1900	1472	1767	1826	1497
Q Serve(g_s), s	5.5	9.2	9.4	9.8	16.9	5.3	2.8	6.9	22.0	2.0	7.3	3.8
Cycle Q Clear(g_c), s	5.5	9.2	9.4	9.8	16.9	5.3	2.8	6.9	22.0	2.0	7.3	3.8
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	585	592	196	664	563	123	510	395	101	469	384
V/C Ratio(X)	0.74	0.34	0.34	1.60	0.64	0.24	0.48	0.36	0.93	0.41	0.38	0.21
Avail Cap(c_a), veh/h	372	585	592	196	664	563	176	515	399	173	495	406
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	31.2	31.2	40.1	24.3	20.6	40.4	26.6	32.2	41.0	27.6	26.3
Incr Delay (d2), s/veh	2.6	1.5	1.5	290.9	4.6	1.0	1.1	0.4	28.9	1.0	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.5	4.7	20.0	8.1	2.1	1.3	3.1	10.8	0.9	3.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	32.7	32.7	331.0	29.0	21.6	41.4	27.1	61.1	41.9	28.1	26.6
LnGrp LOS	D	C	C	F	C	C	D	C	E	D	C	C
Approach Vol, veh/h	512				868		609				302	
Approach Delay, s/veh	35.4				136.4		49.1				29.6	
Approach LOS	D				F		D				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	36.3	10.4	27.7	14.0	34.0	9.3	28.7				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	19.9	20.4	* 8.8	24.4	* 9.8	29.4	* 8.8	24.4				
Max Q Clear Time (g_c+11), s	18.9	18.9	4.8	9.3	11.8	11.4	4.0	24.0				
Green Ext Time (p_c), s	0.1	0.5	0.0	1.1	0.0	2.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	76.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 8.2

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	131	1	5	131	0	7	1	13	23	24	9
Future Vol, veh/h	0	131	1	5	131	0	7	1	13	23	24	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	9	0	0
Mvmt Flow	0	141	1	5	141	0	8	1	14	25	26	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.2	8.2	7.6	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	33%	0%	4%	49%	0%
Vol Thru, %	5%	99%	96%	51%	0%
Vol Right, %	62%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	132	136	47	9
LT Vol	7	0	5	23	0
Through Vol	1	131	131	24	0
RT Vol	13	1	0	0	9
Lane Flow Rate	23	142	146	51	10
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.028	0.169	0.174	0.078	0.012
Departure Headway (Hd)	4.418	4.282	4.272	5.558	4.454
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	811	840	842	646	805
Service Time	2.439	2.292	2.282	3.278	2.173
HCM Lane V/C Ratio	0.028	0.169	0.173	0.079	0.012
HCM Control Delay	7.6	8.2	8.2	8.7	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.6	0.6	0.3	0

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	119	337	20	101	332
Future Vol, veh/h	12	119	337	20	101	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	129	366	22	110	361
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	958	377	0	0	388	0
Stage 1	377	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	285	670	-	-	1170	-
Stage 1	694	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	251	670	-	-	1170	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.2	0	2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	581	1170	-	
HCM Lane V/C Ratio	-	-	0.245	0.094	-	
HCM Control Delay (s)	-	-	13.2	8.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1	0.3	-	

SITE LAYOUT

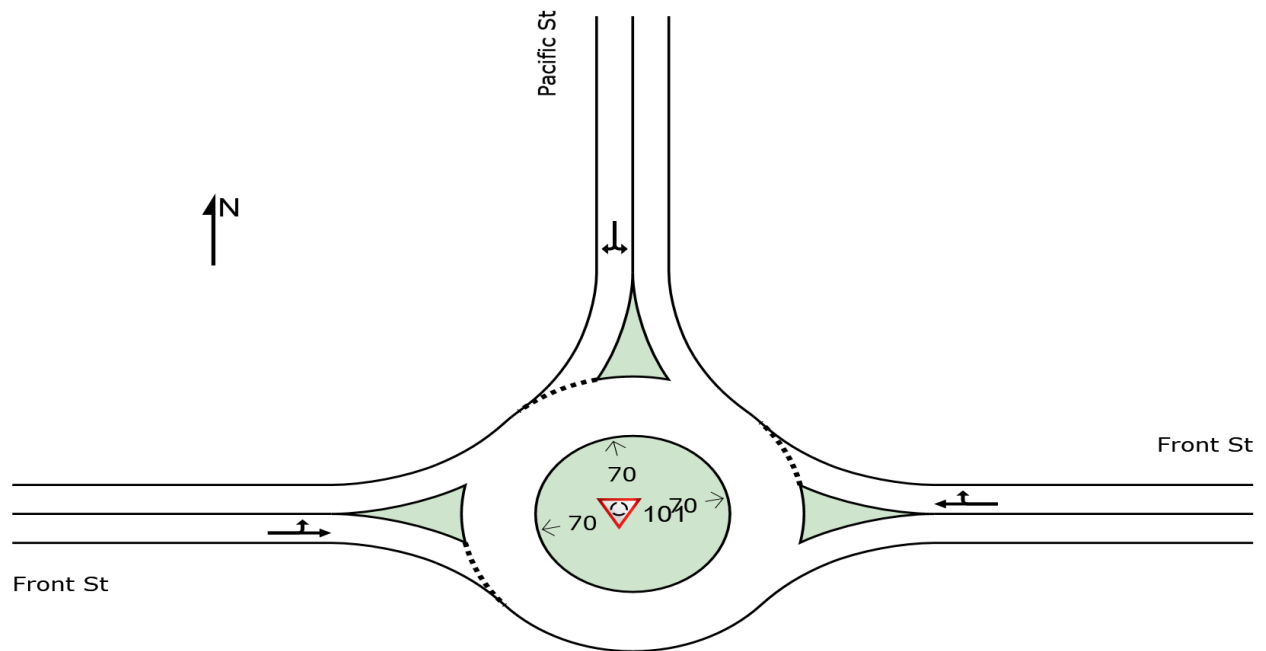
 Site: 101 [INT #1 Ex Plus Approved Projects Plus Project_PM
(Site Folder: Existing Plus Approved Plus Project)]

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 **Site: 101 [INT #1 Ex Plus Approved Projects Plus Project_PM
(Site Folder: Existing Plus Approved Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	448	3.0	448	3.0	1241	0.361	100	6.1	LOS A	2.2	55.9	Full	1600	0.0	0.0
Approach	448	3.0	448	3.0		0.361		6.1	LOS A	2.2	55.9				
North: Pacific St															
Lane 1 ^d	98	3.0	98	3.0	833	0.118	100	5.5	LOS A	0.5	12.2	Full	1600	0.0	0.0
Approach	98	3.0	98	3.0		0.118		5.5	LOS A	0.5	12.2				
West: Front St															
Lane 1 ^d	554	3.0	554	3.0	1306	0.424	100	6.2	LOS A	2.9	75.3	Full	1600	0.0	0.0
Approach	554	3.0	554	3.0		0.424		6.2	LOS A	2.9	75.3				
All Vehicles	1100	3.0	1100	3.0		0.424		6.1	LOS A	2.9	75.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From E					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	W	N								
Lane 1	441	7	448	3.0	1241	0.361	100	NA	NA	
Approach	441	7	448	3.0		0.361				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From N					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	E	W								
Lane 1	26	72	98	3.0	833	0.118	100	NA	NA	
Approach	26	72	98	3.0		0.118				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From W					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	N	E								

Lane 1	73	481	554	3.0	1306	0.424	100	NA	NA
Approach	73	481	554	3.0		0.424			
Total %HV Deg.Satn (v/c)									
All Vehicles	1100	3.0		0.424					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	12	5	125	110	4
Future Vol, veh/h	5	12	5	125	110	4
Conflicting Peds, #/hr	28	8	52	0	0	52
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	4	7	0
Mvmt Flow	6	14	6	149	131	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	375	194	188	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	630	853	1398	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	574	811	1337	-	-	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.1	0.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1337	-	723	-	-	
HCM Lane V/C Ratio	0.004	-	0.028	-	-	
HCM Control Delay (s)	7.7	0	10.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	519	24	0	464	43	0	0	8	0	0	84
Future Vol, veh/h	62	519	24	0	464	43	0	0	8	0	0	84
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	64	535	25	0	478	44	0	0	8	0	0	87
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	543	0	0	-	-	0	-	-	592	-	-	524
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.2	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	1011	-	-	0	-	-	0	0	510	0	0	557
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	-	-	-	-	-	491	-	-	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0			12.5			12.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1					
Capacity (veh/h)	491	993	-	-	-	-	546					
HCM Lane V/C Ratio	0.017	0.064	-	-	-	-	0.159					
HCM Control Delay (s)	12.5	8.9	-	-	-	-	12.8					
HCM Lane LOS	B	A	-	-	-	-	B					
HCM 95th %tile Q(veh)	0.1	0.2	-	-	-	-	0.6					

EX+AP+P_PM
5: Pacific Ave & Laurel St

EX+AP+P_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	494	46	51	455	44	32	64	55	45	49	15
Future Volume (veh/h)	18	494	46	51	455	44	32	64	55	45	49	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.82		0.69	0.83		0.68
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	19	509	47	53	469	45	33	66	57	46	51	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	53	836	77	115	897	86	279	161	139	125	120	30
Arrive On Green	0.03	0.50	0.50	0.06	0.53	0.53	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	1675	155	1810	1682	161	1110	738	637	326	551	136
Grp Volume(v), veh/h	19	0	556	53	0	514	33	0	123	112	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1829	1810	0	1843	1110	0	1375	1013	0	0
Q Serve(g_s), s	1.0	0.0	20.8	2.7	0.0	17.1	0.0	0.0	7.3	4.1	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	20.8	2.7	0.0	17.1	3.3	0.0	7.3	11.4	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.09	1.00		0.46	0.41		0.13
Lane Grp Cap(c), veh/h	53	0	913	115	0	983	279	0	300	274	0	0
V/C Ratio(X)	0.36	0.00	0.61	0.46	0.00	0.52	0.12	0.00	0.41	0.41	0.00	0.00
Avail Cap(c_a), veh/h	206	0	913	206	0	983	317	0	347	317	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.00	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	45.3	0.0	17.1	42.9	0.0	14.3	30.3	0.0	31.9	33.4	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	3.0	1.0	0.0	1.8	0.2	0.0	0.9	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	9.0	1.2	0.0	7.2	0.6	0.0	2.5	2.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	0.0	20.2	43.9	0.0	16.2	30.5	0.0	32.8	34.4	0.0	0.0
LnGrp LOS	D	A	C	D	A	B	C	A	C	C	A	A
Approach Vol, veh/h		575			567			156			112	
Approach Delay, s/veh		21.0			18.8			32.3			34.4	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	55.3		24.7	10.2	52.0		24.7				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 11	47.4		24.0	* 11	47.4		24.0				
Max Q Clear Time (g_c+I1), s	3.0	19.1		13.4	4.7	22.8		9.3				
Green Ext Time (p_c), s	0.0	3.6		0.4	0.0	3.9		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			22.4									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	140	531	62	291	366	118	42	189	333	73	310	136
Future Volume (veh/h)	140	531	62	291	366	118	42	189	333	73	310	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	144	547	64	300	377	122	43	195	343	75	320	140
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	179	1008	118	206	616	522	103	447	379	131	476	404
Arrive On Green	0.03	0.10	0.10	0.11	0.32	0.32	0.06	0.24	0.24	0.07	0.25	0.25
Sat Flow, veh/h	1810	3257	380	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	144	303	308	300	377	122	43	195	343	75	320	140
Grp Sat Flow(s),veh/h/ln	1810	1805	1832	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	7.5	15.1	15.2	10.8	15.9	5.3	2.2	8.3	19.7	3.8	14.4	6.8
Cycle Q Clear(g_c), s	7.5	15.1	15.2	10.8	15.9	5.3	2.2	8.3	19.7	3.8	14.4	6.8
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	559	567	206	616	522	103	447	379	131	476	404
V/C Ratio(X)	0.80	0.54	0.54	1.46	0.61	0.23	0.42	0.44	0.91	0.57	0.67	0.35
Avail Cap(c_a), veh/h	320	559	567	206	616	522	168	488	414	244	568	481
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	36.2	36.3	42.1	27.1	23.5	43.3	30.9	35.3	42.6	32.1	29.2
Incr Delay (d2), s/veh	2.9	3.3	3.3	231.1	4.5	1.0	1.0	0.7	21.9	1.5	2.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	7.8	8.0	18.0	7.8	2.1	1.0	3.8	9.8	1.7	6.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	39.6	39.6	273.2	31.6	24.5	44.2	31.6	57.2	44.1	34.5	29.7
LnGrp LOS	D	D	D	F	C	C	D	C	E	D	C	C
Approach Vol, veh/h	755				799		581				535	
Approach Delay, s/veh	41.2				121.2		47.7				34.6	
Approach LOS	D				F		D				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.4	35.4	9.6	28.4	15.0	34.0	11.1	27.0				
Change Period (Y+Rc), s	4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	13	23.4	* 8.8	28.4	* 11	29.4	* 13	24.4				
Max Q Clear Time (g_c+1.5), s	17.9	17.9	4.2	16.4	12.8	17.2	5.8	21.7				
Green Ext Time (p_c), s	0.1	1.3	0.0	1.9	0.0	3.0	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	65.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 8.4

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	164	2	14	147	0	10	0	11	21	29	29
Future Vol, veh/h	0	164	2	14	147	0	10	0	11	21	29	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	173	2	15	155	0	11	0	12	22	31	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.5	8.5	7.8	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	48%	0%	9%	42%	0%
Vol Thru, %	0%	99%	91%	58%	0%
Vol Right, %	52%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	166	161	50	29
LT Vol	10	0	14	21	0
Through Vol	0	164	147	29	0
RT Vol	11	2	0	0	29
Lane Flow Rate	22	175	169	53	31
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.029	0.211	0.206	0.08	0.039
Departure Headway (Hd)	4.665	4.356	4.369	5.502	4.585
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	767	827	824	652	781
Service Time	2.694	2.374	2.386	3.228	2.311
HCM Lane V/C Ratio	0.029	0.212	0.205	0.081	0.04
HCM Control Delay	7.8	8.5	8.5	8.7	7.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.8	0.8	0.3	0.1

Intersection

Int Delay, s/veh 2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	76	440	35	165	459
Future Vol, veh/h	9	76	440	35	165	459
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	83	478	38	179	499

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1354	497	0
Stage 1	497	-	-
Stage 2	857	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	165	573	-
Stage 1	611	-	-
Stage 2	416	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	126	573	-
Mov Cap-2 Maneuver	126	-	-
Stage 1	611	-	-
Stage 2	318	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	417	1050
HCM Lane V/C Ratio	-	-	0.222	0.171
HCM Control Delay (s)	-	-	16.1	9.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0.6

Appendix E

Cumulative Buildout Volumes
City of Santa Cruz Critical Intersections

Cumulative Buildout Volumes City of Santa Cruz Critical Intersections

3/19/2020

#	Intersection	NORTHE	NORTHE	NORTHE	SOUTHE	SOUTHE	SOUTHE	EASTBN	EASTBN	EASTBN	WESTBN	WESTBN	WESTBN	TOTAL	SOURCE
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	LEFT	THRU	RIGHT		
1	Western/High	240	0	94	0	0	0	0	755	164	61	448	0	1762	GP
2	Bay/High	174	508	55	515	882	68	178	380	275	113	309	269	3726	GP
3	Moore/High	24	7	17	45	21	41	9	880	35	24	661	21	1785	GP
4	Laurent/High	16	49	16	32	24	16	34	856	38	14	735	30	1860	GP
5	River/Potrero	90	766	86	272	737	103	129	10	76	197	9	255	2730	GP
6	River/Hwy. 1	99	454	726	1109	545	571	490	2350	86	561	1862	693	9546	Downtown Plan
7	River/Fern	410	1112	0	0	1564	43	1	0	106	0	0	0	3236	GP
8	River/Encinal	576	563	111	8	488	145	210	6	1047	117	6	15	3292	GP
9	Ocean-Hwy. 17/Plymouth	405	654	0	186	1101	239	71	208	495	127	97	55	3638	Ocean Ext
10	Market/Isbel-Goss	47	154	147	202	114	1	4	192	36	63	77	218	1255	GP
11	North Branciforte/Goss	220	70	95	3	113	61	40	312	295	33	74	1	1317	GP
12	Morrissey/Fairmount	53	794	28	53	862	108	160	89	127	24	27	82	2407	GP
13	Bay/Nobel-Iowa	100	717	98	42	1168	56	39	49	129	65	45	41	2549	GP
14	Bay/Escalona	27	811	41	145	1108	70	61	43	40	49	33	62	2490	GP
15	Bay/King	148	723	160	194	972	110	61	161	100	98	97	167	2991	GP
16	King/Laurel	171	69	60	36	62	10	20	430	154	67	262	15	1356	GP
17	Storey/King	0	0	0	551	0	53	26	380	0	0	278	88	1376	GP
18	Route 1/Shaffer Rd	62	0	80	0	0	0	0	690	51	38	536	0	1457	GP
19	Western/Hwy. 1	19	113	205	203	86	44	27	451	25	88	382	232	1875	GP
20	Swift/Mission	96	76	692	67	42	16	30	721	82	452	637	117	3028	GP
21	Miramar/Mission	111	31	164	103	15	137	95	1991	58	178	1428	89	4400	GP
22	Almar-Younglove/Mission	38	1	276	45	0	44	0	1808	24	219	1468	2	3925	GP
23	Bay/Mission	146	170	133	454	194	157	166	2178	109	222	1692	348	5969	190 W Cliff
24	Laurel/Mission	412	223	41	33	285	23	51	2259	487	77	1886	48	5825	GP
25	Walnut/Mission	125	151	59	78	146	85	145	2012	182	41	1791	41	4856	GP
26	King-Union/Mission	20	6	19	1161	1	4	0	2556	3	14	1987	217	5988	GP
27	Chestnut-Hwy. 1/Mission	138	332	46	71	497	1822	2436	1060	42	33	849	93	7419	Downtown Plan
28	N. Pacific/RIVER	226	31	59	44	26	17	20	659	382	32	713	51	2260	GP
29	Center/Mission	98	0	621	0	0	0	0	843	64	423	691	0	2740	GP
30	Front-Pacific/Mission-Water	0	0	0	64	371	221	263	1133	165	166	893	39	3315	Downtown Plan
31	River/Water	111	384	252	312	426	58	82	1166	62	204	958	346	4361	GP
32	Ocean/Kennan-Washburn	39	1540	52	59	1733	11	40	0	53	47	0	39	3613	GP
33	Ocean/Water	203	1359	96	522	1448	399	495	1578	162	168	1008	339	7777	Downtown Plan
34	Market/Water	0	0	0	507	0	189	223	1836	0	0	1170	128	4053	GP
35	N. Branciforte/Water	322	323	78	41	219	129	458	1273	470	101	930	50	4394	GP
36	Seabright/Water	60	0	49	0	0	0	0	1353	121	23	1021	0	2627	GP
37	Morrissey/Water-Soquel	19	127	30	293	233	75	535	1695	38	63	1489	36	4633	GP
38	Frederick/Soquel	146	0	433	0	0	0	0	1755	93	226	1416	0	4069	GP
39	Hagemann-Trevethan/Soquel	77	14	34	74	14	86	69	2092	53	22	1503	24	4062	GP
40	Park/Soquel	53	18	26	128	7	70	39	2147	30	12	1409	28	3967	GP
41	Capitola/Soquel	708	16	77	47	25	28	20	920	1149	79	672	25	3766	GP
42	La Fonda/Soquel	1	1	1	52	0	76	97	763	2	2	524	69	1588	GP
43	Bay/California Ave	269	0	47	0	0	0	0	656	204	64	608	0	1848	GP
44	Bay/California St	0	0	0	263	0	95	132	597	0	0	466	420	1973	GP
45	California/Laurel	35	224	326	23	169	29	11	828	30	168	752	20	2615	GP
46	Chestnut/Laurel	141	59	95	26	72	76	111	982	91	79	866	28	2626	GP
47	Center/Laurel	62	94	56	133	77	50	30	965	65	56	823	58	2469	GP
48	Cedar/Laurel	0	0	14	0	0	116	68	1195	26	0	898	94	2411	GP
49	Pacific/Laurel	59	96	44	97	59	63	162	1075	44	64	982	91	2836	508 Front TIA
50	Front/Laurel	4	228	254	202	366	262	165	996	29	227	830	195	3758	508 Front TIA
51	Front/Metro Center	14	661	20	0	833	17	14	0	19	6	0	11	1595	508 Front TIA
52	Front/Cathcart	116	569	0	0	805	317	193	0	111	0	0	0	2111	508 Front TIA
53	Front/Soquel	46	523	243	193	649	75	70	262	44	498	314	79	2996	508 Front TIA
54	Front/Cooper	79	504	0	0	668	78	148	0	148	0	0	0	1625	GP
55	River S./Soquel	0	0	0	445	0	161	0	602	0	0	619	178	2005	GP
56	Riverside-Dakota/Soquel (new)	36	17	39	29	2	72	13	960	3	3	689	17	1880	GP
57	Ocean/Soquel	318	817	296	353	611	269	259	601	129	188	424	83	4348	GP
58	Branciforte/Soquel	56	143	79	58	170	116	163	843	112	101	579	34	2454	GP
59	Seabright/Soquel	217	45	223	90	128	70	32	1075	125	179	585	16	2785	GP
60	San Lorenzo/Laurel-Broadway	498	0	33	0	0	0	0	858	542	0	693	0	2624	GP
61	Ocean/Broadway	12	521	89	230	699	296	253	534	47	102	443	118	3344	GP
62	S. Branciforte/Broadway	70	51	9	115	77	104	75	725	64	8	433	75	1806	GP
63	Seabright/Broadway	171	242	51	10	269	112	184	394	253	47	183	13	1929	GP
64	Pacific Avenue/Center	18	166	549	34	162	214	0	0	0	444	172	62	1821	190 W Cliff
65	West Cliff/Bay	54	383	0	0	432	414	421	0	58	0	0	0	1762	190 W Cliff
66	Pacific/Beach	21	120	35	116	149	239	548	235	48	0	0	0	1511	190 W Cliff
67	Cliff/Beach	0	0	0	186	0	0	229	426	0	0	0	0	841	GP
68	Riverside/Beach	0	0	0	96	0	0	0	339	0	0	0	0	435	GP
69	Riverside/Second	0	0	0	43	164	117	0	0	5	2	7	0	338	GP

Appendix F

Analysis Worksheets for Cumulative (2030) Conditions

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	82	549	524	10	20	85
Future Vol, veh/h	82	549	524	10	20	85
Conflicting Peds, #/hr	7	0	0	7	4	17
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	10	2	2	0	0	8
Mvmt Flow	82	549	524	10	20	85
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	541	0	-	0	1253	553
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	717	-
Critical Hdwy	4.2	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.29	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	988	-	-	-	192	521
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	982	-	-	-	174	511
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	484	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		18.4		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	982	-	-	-	373	
HCM Lane V/C Ratio	0.084	-	-	-	0.282	
HCM Control Delay (s)	9	-	-	-	18.4	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.3	-	-	-	1.1	

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	10	10	10	10	8	10	167	20	30	130	7
Future Vol, veh/h	9	10	10	10	10	8	10	167	20	30	130	7
Conflicting Peds, #/hr	28	0	8	8	0	28	52	0	10	10	0	52
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	7	0
Mvmt Flow	9	10	10	10	10	8	10	167	20	30	130	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	480	463	194	419	456	215	189	0	0	197	0	0
Stage 1	246	246	-	207	207	-	-	-	-	-	-	-
Stage 2	234	217	-	212	249	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	499	499	853	548	504	830	1397	-	-	1388	-	-
Stage 1	762	706	-	800	734	-	-	-	-	-	-	-
Stage 2	774	727	-	795	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	443	459	811	512	463	804	1336	-	-	1376	-	-
Mov Cap-2 Maneuver	443	459	-	512	463	-	-	-	-	-	-	-
Stage 1	723	659	-	787	722	-	-	-	-	-	-	-
Stage 2	732	715	-	750	658	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.1		11.9		0.4		1.4					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1336	-	-	533	548	1376	-	-				
HCM Lane V/C Ratio	0.007	-	-	0.054	0.051	0.022	-	-				
HCM Control Delay (s)	7.7	0	-	12.1	11.9	7.7	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-				

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	29	20	10	10	0	6	10	543	10	61	524	24
Future Vol, veh/h	29	20	10	10	0	6	10	543	10	61	524	24
Conflicting Peds, #/hr	20	0	6	6	0	20	3	0	19	19	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	29	20	10	10	0	6	10	543	10	61	524	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1252	1253	545	1266	1260	587	551	0	0	572	0	0
Stage 1	661	661	-	587	587	-	-	-	-	-	-	-
Stage 2	591	592	-	679	673	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	151	174	542	147	172	513	1029	-	-	1011	-	-
Stage 1	455	463	-	499	500	-	-	-	-	-	-	-
Stage 2	497	497	-	445	457	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	135	154	538	118	152	496	1026	-	-	995	-	-
Mov Cap-2 Maneuver	135	154	-	118	152	-	-	-	-	-	-	-
Stage 1	448	421	-	484	485	-	-	-	-	-	-	-
Stage 2	476	482	-	377	416	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	39.4		29.1		0.2		0.9	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1026	-	-	162 165	995	-	-
HCM Lane V/C Ratio	0.01	-	-	0.364 0.097	0.061	-	-
HCM Control Delay (s)	8.5	0	-	39.4 29.1	8.9	0	-
HCM Lane LOS	A	A	-	E D	A A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.5 0.3	0.2	-	-

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1195	26	0	898	94	0	0	14	0	0	116
Future Vol, veh/h	68	1195	26	0	898	94	0	0	14	0	0	116
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	68	1195	26	0	898	94	0	0	14	0	0	116
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1013	0	0	-	-	0	-	-	1252	-	-	969
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.2	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	673	-	-	0	-	-	0	0	212	0	0	310
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	661	-	-	-	-	-	-	-	204	-	-	304
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0			23.9			24		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1					
Capacity (veh/h)	204	661	-	-	-	-	304					
HCM Lane V/C Ratio	0.069	0.103	-	-	-	-	0.382					
HCM Control Delay (s)	23.9	11.1	-	-	-	-	24					
HCM Lane LOS	C	B	-	-	-	-	C					
HCM 95th %tile Q(veh)	0.2	0.3	-	-	-	-	1.7					

CU_PM

5: Pacific Ave & Laurel St

CU_PM

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	1075	44	64	982	91	59	96	44	97	59	63
Future Volume (veh/h)	162	1075	44	64	982	91	59	96	44	97	59	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	0.82		0.66	0.86		0.65
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	162	1075	44	64	982	91	59	96	44	97	59	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	178	1114	46	106	1106	854	172	195	89	175	115	123
Arrive On Green	0.10	0.63	0.63	0.06	0.59	0.59	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	1779	73	1810	1885	1456	1063	1001	459	1049	591	631
Grp Volume(v), veh/h	162	0	1119	64	982	91	59	0	140	97	0	122
Grp Sat Flow(s),veh/h/ln	1810	0	1852	1810	1885	1456	1063	0	1460	1049	0	1223
Q Serve(g_s), s	10.6	0.0	68.5	4.1	53.9	3.3	6.3	0.0	10.2	10.9	0.0	10.7
Cycle Q Clear(g_c), s	10.6	0.0	68.5	4.1	53.9	3.3	17.0	0.0	10.2	21.1	0.0	10.7
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.31	1.00		0.52
Lane Grp Cap(c), veh/h	178	0	1160	106	1106	854	172	0	284	175	0	238
V/C Ratio(X)	0.91	0.00	0.96	0.60	0.89	0.11	0.34	0.00	0.49	0.56	0.00	0.51
Avail Cap(c_a), veh/h	178	0	1160	124	1106	854	187	0	304	189	0	255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.46	0.46	0.46	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	0.0	21.2	55.1	21.4	10.9	50.9	0.0	43.0	52.5	0.0	43.2
Incr Delay (d2), s/veh	42.0	0.0	19.2	1.3	5.4	0.1	1.2	0.0	1.3	3.0	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	33.3	1.9	24.0	1.1	1.7	0.0	3.8	3.0	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	95.6	0.0	40.4	56.4	26.8	11.0	52.0	0.0	44.4	55.5	0.0	44.9
LnGrp LOS	F		D	E	C	B	D		D	E		D
Approach Vol, veh/h		1281			1137			199			219	
Approach Delay, s/veh		47.4			27.2			46.6			49.6	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	75.0		27.3	11.3	79.7		27.3				
Change Period (Y+Rc), s	4.2	4.6		4.0	4.2	4.6		4.0				
Max Green Setting (Gmax), s	11.8	70.4		25.0	8.2	74.0		25.0				
Max Q Clear Time (g_c+I1), s	12.6	55.9		23.1	6.1	70.5		19.0				
Green Ext Time (p_c), s	0.0	7.1		0.2	0.0	2.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			39.4									
HCM 6th LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	996	29	227	830	195	4	228	254	202	366	262
Future Volume (veh/h)	165	996	29	227	830	195	4	228	254	202	366	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No				No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	165	996	29	227	830	195	4	228	254	202	366	262
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	164	1346	39	251	805	682	15	339	287	226	560	475
Arrive On Green	0.09	0.38	0.38	0.14	0.42	0.42	0.01	0.18	0.18	0.12	0.29	0.29
Sat Flow, veh/h	1810	3582	104	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	165	502	523	227	830	195	4	228	254	202	366	262
Grp Sat Flow(s),veh/h/ln	1810	1805	1881	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	12.7	33.7	33.7	17.3	59.3	11.1	0.3	15.7	21.5	15.4	23.6	19.2
Cycle Q Clear(g_c), s	12.7	33.7	33.7	17.3	59.3	11.1	0.3	15.7	21.5	15.4	23.6	19.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	678	707	251	805	682	15	339	287	226	560	475
V/C Ratio(X)	1.01	0.74	0.74	0.91	1.03	0.29	0.27	0.67	0.88	0.89	0.65	0.55
Avail Cap(c_a), veh/h	164	678	707	291	805	682	103	428	362	257	589	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.21	0.21	0.21	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	37.8	37.8	59.4	40.4	26.5	69.0	53.7	56.1	60.4	43.1	41.6
Incr Delay (d2), s/veh	33.5	1.6	1.5	21.9	36.9	0.9	3.5	2.9	18.8	26.4	2.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	15.2	15.8	9.5	35.5	4.5	0.2	7.8	10.3	8.7	11.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.1	39.4	39.3	81.3	77.2	27.3	72.5	56.6	74.9	86.7	45.5	42.8
LnGrp LOS	F	D	D	F	F	C	E	E	E	F	D	D
Approach Vol, veh/h	1190		1252				486			830		
Approach Delay, s/veh	47.3		70.2				66.3			54.7		
Approach LOS	D		E				E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	63.9	4.9	45.9	23.1	57.2	21.2	29.6					
Change Period (Y+Rc), s	3.7	4.6	3.7	4.6	3.7	4.6	3.7	4.6				
Max Green Setting (Gmax), s	59.3	8.0	43.4	22.5	49.5	19.9	31.5					
Max Q Clear Time (g_c+I14), s	61.3	2.3	25.6	19.3	35.7	17.4	23.5					
Green Ext Time (p_c), s	0.0	0.0	3.0	0.1	5.7	0.1	1.4					
Intersection Summary												
HCM 6th Ctrl Delay	59.0											
HCM 6th LOS	E											

Intersection

Intersection Delay, s/veh 8.3

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	164	1	13	147	0	9	0	11	25	16	34
Future Vol, veh/h	0	164	1	13	147	0	9	0	11	25	16	34
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	164	1	13	147	0	9	0	11	25	16	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.4	8.4	7.7	8.1
HCM LOS	A	A	A	A

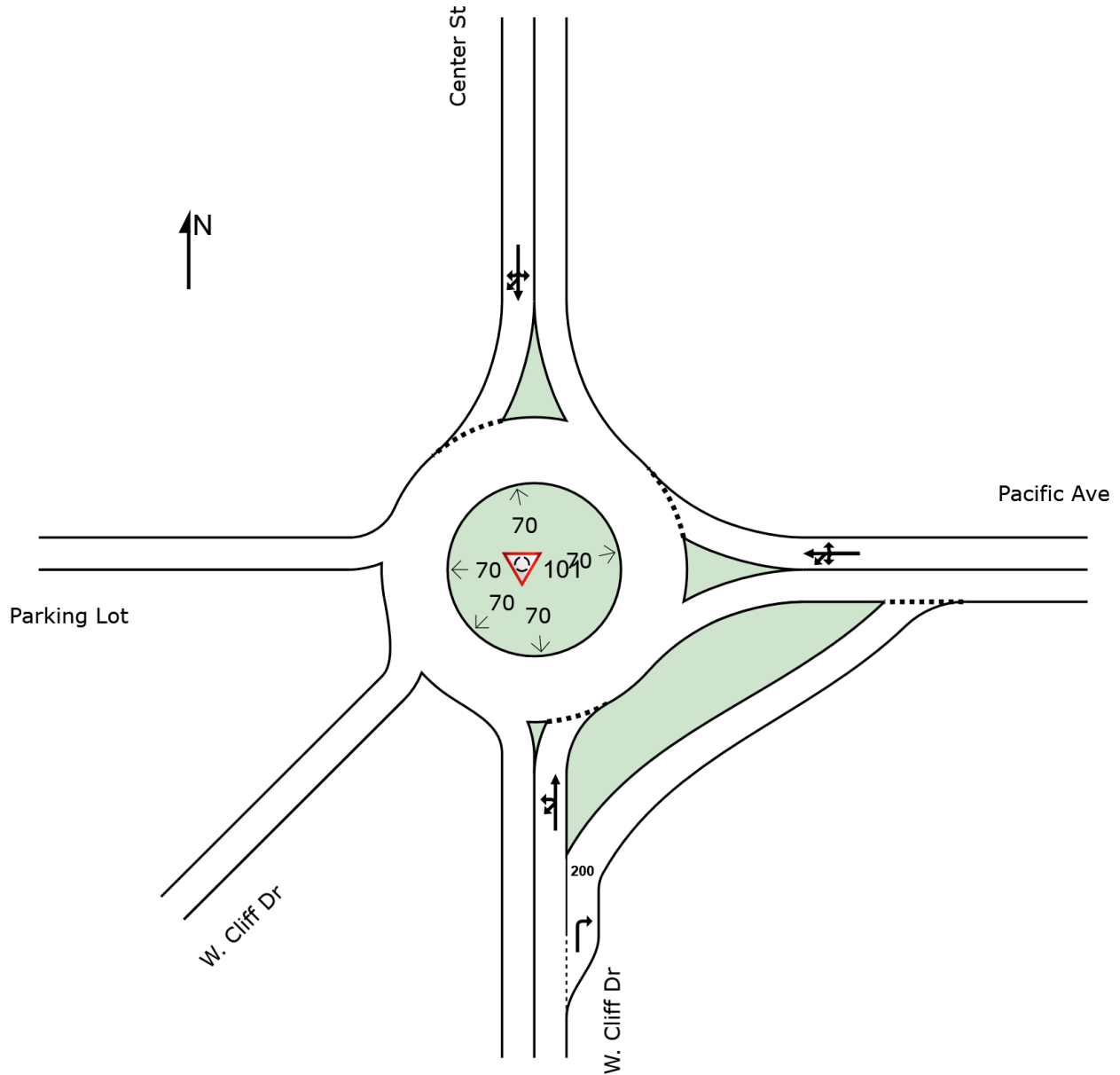
Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	45%	0%	8%	61%	0%
Vol Thru, %	0%	99%	92%	39%	0%
Vol Right, %	55%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	165	160	41	34
LT Vol	9	0	13	25	0
Through Vol	0	164	147	16	0
RT Vol	11	1	0	0	34
Lane Flow Rate	20	165	160	41	34
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.025	0.198	0.192	0.063	0.043
Departure Headway (Hd)	4.584	4.318	4.325	5.548	4.537
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	782	833	832	647	791
Service Time	2.608	2.332	2.34	3.27	2.258
HCM Lane V/C Ratio	0.026	0.198	0.192	0.063	0.043
HCM Control Delay	7.7	8.4	8.4	8.6	7.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.7	0.7	0.2	0.1

SITE LAYOUT

 Site: 101 [INT #9 CU_PM (Site Folder: Cumulative Conditions)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 Site: 101 [INT #9 CU_PM (Site Folder: Cumulative Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance																
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.	
	[Total veh/h	HV] %	[Total veh/h	HV] %		veh/h	v/c			%	sec			[Veh	Dist] ft	%
South: W. Cliff Dr																
Lane 1 ^d	199	3.0	199	3.0	1332	0.149	100	3.8	LOS A	0.7	16.6	Full	1600	0.0	0.0	
Lane 2	578	3.0	578	3.0	1292	0.447	100	6.7	LOS A	3.2	81.6		Short	200	0.0	NA
Approach	777	3.0	777	3.0		0.447		6.0	LOS A	3.2	81.6					
East: Pacific Ave																
Lane 1 ^d	719	3.0	719	3.0	1083	0.664	100	12.6	LOS B	8.3	212.7	Full	1600	0.0	0.0	
Approach	719	3.0	719	3.0		0.664		12.6	LOS B	8.3	212.7					
North: Center St																
Lane 1 ^d	437	3.0	437	3.0	644	0.679	100	19.7	LOS C	5.6	144.4	Full	1600	0.0	0.0	
Approach	437	3.0	437	3.0		0.679		19.7	LOS C	5.6	144.4					
All Vehicles	1933	3.0	1933	3.0		0.679		11.5	LOS B	8.3	212.7					

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)											
South: W. Cliff Dr											
Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	5	175	-	199	3.0	1332	0.149	100	NA	NA
Lane 2	-	-	-	578	578	3.0	1292	0.447	100	0.0	1
Approach	19	5	175	578	777	3.0	0.447				
East: Pacific Ave											
Mov. From E To Exit:	L2 S	L1 SW	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	467	181	5	65	719	3.0	1083	0.664	100	NA	NA
Approach	467	181	5	65	719	3.0	0.664				
North: Center St											

Mov. From N To Exit:	L2	T1	R1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	171	225	5	437	3.0	644	0.679	100	NA	NA
Approach	36	171	225	5	437	3.0		0.679			
Total %HV Deg.Satn (v/c)											
All Vehicles	1933	3.0		0.679							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h		Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	843	64	423	691	98	621
Future Volume (vph)	843	64	423	691	98	621
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3514		1805	3574	1787	1570
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3514		1805	3574	1787	1570
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	843	64	423	691	98	621
RTOR Reduction (vph)	4	0	0	0	0	535
Lane Group Flow (vph)	903	0	423	691	98	86
Confl. Peds. (#/hr)		16	16			3
Confl. Bikes (#/hr)		15				
Heavy Vehicles (%)	1%	0%	0%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1 3 9	1 2 3 9	4	
Permitted Phases						4
Actuated Green, G (s)	35.0		74.0	117.0	20.0	20.0
Effective Green, g (s)	35.0		74.0	117.0	20.0	20.0
Actuated g/C Ratio	0.24		0.51	0.81	0.14	0.14
Clearance Time (s)	4.0				4.0	4.0
Vehicle Extension (s)	3.0				3.0	3.0
Lane Grp Cap (vph)	848		921	2883	246	216
v/s Ratio Prot	c0.26		c0.23	0.19	c0.05	
v/s Ratio Perm						0.05
v/c Ratio	1.07		0.46	0.24	0.40	0.40
Uniform Delay, d1	55.0		22.7	3.4	57.0	57.0
Progression Factor	1.00		0.33	0.14	1.00	1.00
Incremental Delay, d2	49.7		0.1	0.0	1.1	1.2
Delay (s)	104.7		7.6	0.5	58.1	58.2
Level of Service	F		A	A	E	E
Approach Delay (s)	104.7			3.2	58.2	
Approach LOS	F			A	E	
Intersection Summary						
HCM 2000 Control Delay			51.2		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.63			
Actuated Cycle Length (s)			145.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			70.9%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	263	1133	165	166	893	39	0	0	0	64	371	221
Future Volume (vph)	263	1133	165	166	893	39	0	0	0	64	371	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95						1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00						1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.98		1.00	0.99						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1787	3474		3502	3521						1854	1470
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1787	3474		3502	3521						1854	1470
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	263	1133	165	166	893	39	0	0	0	64	371	221
RTOR Reduction (vph)	0	8	0	0	2	0	0	0	0	0	0	139
Lane Group Flow (vph)	263	1290	0	166	930	0	0	0	0	0	435	82
Confl. Peds. (#/hr)	14		26	26		14	43		43	43		43
Confl. Bikes (#/hr)			15			19			1			8
Heavy Vehicles (%)	1%	1%	1%	0%	1%	13%	0%	0%	0%	0%	2%	1%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	4 5	4 5 6		9	6 9					3	3	
Permitted Phases												3
Actuated Green, G (s)	55.0	79.0		20.0	44.0						30.0	30.0
Effective Green, g (s)	55.0	79.0		20.0	44.0						30.0	30.0
Actuated g/C Ratio	0.38	0.54		0.14	0.30						0.21	0.21
Clearance Time (s)				4.0							4.0	4.0
Vehicle Extension (s)				3.0							2.0	2.0
Lane Grp Cap (vph)	677	1892		483	1068						383	304
v/s Ratio Prot	0.15	c0.37		0.05	c0.26						c0.23	
v/s Ratio Perm												0.06
v/c Ratio	0.39	0.68		0.34	0.87						1.14	0.27
Uniform Delay, d1	32.8	23.9		56.6	47.8						57.5	48.3
Progression Factor	0.59	0.69		1.00	1.00						1.00	1.00
Incremental Delay, d2	0.2	0.4		0.4	7.9						88.3	0.2
Delay (s)	19.5	16.9		57.0	55.7						145.8	48.5
Level of Service	B	B		E	E						F	D
Approach Delay (s)		17.4			55.9			0.0			113.0	
Approach LOS		B			E			A			F	
Intersection Summary												
HCM 2000 Control Delay			49.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			145.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			81.6%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1166	62	204	958	346	111	384	252	312	426	58
Future Volume (veh/h)	82	1166	62	204	958	346	111	384	252	312	426	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	82	1166	62	204	958	346	111	384	0	312	426	58
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	105	1234	528	219	1461	614	140	637		322	453	62
Arrive On Green	0.06	0.34	0.34	0.12	0.41	0.41	0.08	0.18	0.00	0.18	0.28	0.28
Sat Flow, veh/h	1795	3582	1533	1795	3582	1506	1795	3582	1598	1810	1630	222
Grp Volume(v), veh/h	82	1166	62	204	958	346	111	384	0	312	0	484
Grp Sat Flow(s),veh/h/ln	1795	1791	1533	1795	1791	1506	1795	1791	1598	1810	0	1852
Q Serve(g_s), s	4.1	28.5	2.5	10.1	19.5	15.9	5.5	8.9	0.0	15.4	0.0	23.0
Cycle Q Clear(g_c), s	4.1	28.5	2.5	10.1	19.5	15.9	5.5	8.9	0.0	15.4	0.0	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	105	1234	528	219	1461	614	140	637		322	0	514
V/C Ratio(X)	0.78	0.95	0.12	0.93	0.66	0.56	0.79	0.60		0.97	0.00	0.94
Avail Cap(c_a), veh/h	140	1234	528	219	1461	614	140	637		322	0	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.8	28.7	20.2	39.1	21.5	20.5	40.8	34.1	0.0	36.8	0.0	31.8
Incr Delay (d2), s/veh	8.9	11.5	0.3	41.1	2.3	3.7	24.6	1.6	0.0	41.7	0.0	25.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	13.6	0.9	6.9	8.3	6.0	3.3	3.9	0.0	10.4	0.0	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	40.1	20.5	80.2	23.8	24.2	65.4	35.7	0.0	78.5	0.0	57.5
LnGrp LOS	D	D	C	F	C	C	E	D		E	A	E
Approach Vol, veh/h	1310				1508		495				796	
Approach Delay, s/veh	39.9				31.5		42.3				65.7	
Approach LOS	D				C		D				E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	35.0	20.0	20.0	9.3	40.7	11.0	29.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	1.0	31.0	16.0	16.0	7.0	35.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	1.0	30.5	17.4	10.9	6.1	21.5	7.5	25.0				
Green Ext Time (p_c), s	0.0	0.4	0.0	1.1	0.0	6.8	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↑↑	↱	↰	↑↑	↱	↰	↑↑	↱	↰↱	↑↑	↱
Traffic Volume (veh/h)	495	1578	162	168	1008	339	203	1359	96	522	1448	399
Future Volume (veh/h)	495	1578	162	168	1008	339	203	1359	96	522	1448	399
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1885	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	495	1578	0	168	1008	0	203	1359	96	522	1448	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	0	1	1	1
Cap, veh/h	522	1305		129	1023		154	1202	520	398	1305	
Arrive On Green	0.15	0.36	0.00	0.07	0.29	0.00	0.09	0.34	0.34	0.11	0.36	0.00
Sat Flow, veh/h	3483	3582	1610	1810	3582	1598	1795	3582	1548	3483	3582	1598
Grp Volume(v), veh/h	495	1578	0	168	1008	0	203	1359	96	522	1448	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1610	1810	1791	1598	1795	1791	1548	1742	1791	1598
Q Serve(g_s), s	19.7	51.0	0.0	10.0	39.2	0.0	12.0	47.0	6.2	16.0	51.0	0.0
Cycle Q Clear(g_c), s	19.7	51.0	0.0	10.0	39.2	0.0	12.0	47.0	6.2	16.0	51.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	522	1305		129	1023		154	1202	520	398	1305	
V/C Ratio(X)	0.95	1.21		1.30	0.98		1.32	1.13	0.18	1.31	1.11	
Avail Cap(c_a), veh/h	522	1305		129	1023		154	1202	520	398	1305	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	59.0	44.5	0.0	65.0	49.7	0.0	64.0	46.5	32.9	62.0	44.5	0.0
Incr Delay (d2), s/veh	26.7	101.6	0.0	180.1	24.4	0.0	181.8	69.5	0.8	157.1	60.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	40.8	0.0	11.1	20.9	0.0	13.3	32.4	2.5	15.8	33.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.7	146.1	0.0	245.1	74.1	0.0	245.8	116.0	33.7	219.1	105.2	0.0
LnGrp LOS	F	F		F	E		F	F	C	F	F	
Approach Vol, veh/h	2073					1176		1658		1970		
Approach Delay, s/veh	131.7					98.5		127.1		135.4		
Approach LOS	F					F		F		F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	55.0	16.0	55.0	25.0	44.0	20.0	51.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	12.0	51.0	21.0	40.0	16.0	47.0				
Max Q Clear Time (g_c+I1), s	4.0	53.0	14.0	53.0	21.7	41.2	18.0	49.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	126.0
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

CU_PM
14: Ocean St & Kennan St/Washburn Ave

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↗	↖	↗	↗	↖	↗	↖
Traffic Volume (veh/h)	40	0	53	47	0	39	39	1540	52	59	1733	11
Future Volume (veh/h)	40	0	53	47	0	39	39	1540	52	59	1733	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.96	0.98		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	40	0	53	47	0	39	39	1540	52	59	1733	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	122	20	113	265	0	206	63	1871	805	141	2025	871
Arrive On Green	0.13	0.00	0.13	0.13	0.00	0.13	0.03	0.52	0.52	0.08	0.57	0.57
Sat Flow, veh/h	491	155	856	1404	0	1563	1810	3582	1541	1810	3582	1540
Grp Volume(v), veh/h	93	0	0	47	0	39	39	1540	52	59	1733	11
Grp Sat Flow(s),veh/h/ln	1502	0	0	1404	0	1563	1810	1791	1541	1810	1791	1540
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	2.0	1.9	32.4	1.5	2.8	36.7	0.3
Cycle Q Clear(g_c), s	4.9	0.0	0.0	2.5	0.0	2.0	1.9	32.4	1.5	2.8	36.7	0.3
Prop In Lane	0.43		0.57	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	0	0	265	0	206	63	1871	805	141	2025	871
V/C Ratio(X)	0.36	0.00	0.00	0.18	0.00	0.19	0.62	0.82	0.06	0.42	0.86	0.01
Avail Cap(c_a), veh/h	451	0	0	446	0	417	101	1871	805	141	2025	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	0.0	35.0	0.0	34.8	42.9	18.0	10.6	39.6	16.5	8.6
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	3.7	4.3	0.2	2.0	4.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	0.9	0.0	0.8	0.9	13.3	0.5	1.3	14.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.3	0.0	0.0	35.1	0.0	34.9	46.6	22.3	10.8	41.5	21.4	8.6
LnGrp LOS	D	A	A	D	A	C	D	C	B	D	C	A
Approach Vol, veh/h												
1803												
Approach Delay, s/veh												
22.0												
Approach LOS												
C												
Timer - Assigned Phs												
2 3 4 6 7 8												
Phs Duration (G+Y+Rc), s												
15.9 7.1 54.9 15.9 11.0 51.0												
Change Period (Y+Rc), s												
4.0 4.0 4.0 4.0 4.0 4.0												
Max Green Setting (Gmax), s												
24.0 5.0 49.0 24.0 7.0 47.0												
Max Q Clear Time (g_c+I1), s												
6.9 3.9 38.7 4.5 4.8 34.4												
Green Ext Time (p_c), s												
0.3 0.0 8.1 0.2 0.0 8.7												
Intersection Summary												
HCM 6th Ctrl Delay												
22.9												
HCM 6th LOS												
C												

CU_PM
15: Ocean St & Plymouth St & SR-1 Ramp

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	71	208	495	127	97	55	405	654	0	186	1101	239
Future Volume (veh/h)	71	208	495	127	97	55	405	654	0	186	1101	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1885	1885
Adj Flow Rate, veh/h	71	208	0	127	97	55	405	654	0	186	1101	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	0	1	1	1	0	1	1
Cap, veh/h	129	268		288	247	140	447	1691		233	1261	
Arrive On Green	0.22	0.22	0.00	0.22	0.22	0.22	0.25	0.47	0.00	0.13	0.35	0.00
Sat Flow, veh/h	281	1210	1598	1176	1117	634	1795	3582	1598	1810	3676	0
Grp Volume(v), veh/h	279	0	0	127	0	152	405	654	0	186	1101	0
Grp Sat Flow(s), veh/h/ln	1491	0	1598	1176	0	1751	1795	1791	1598	1810	1791	0
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	5.0	14.8	7.9	0.0	6.7	19.4	0.0
Cycle Q Clear(g_c), s	12.4	0.0	0.0	10.7	0.0	5.0	14.8	7.9	0.0	6.7	19.4	0.0
Prop In Lane	0.25		1.00	1.00		0.36	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	397	0		288	0	387	447	1691		233	1261	
V/C Ratio(X)	0.70	0.00		0.44	0.00	0.39	0.91	0.39		0.80	0.87	
Avail Cap(c_a), veh/h	424	0		307	0	415	453	1691		376	1328	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	0.0	0.0	24.6	0.0	22.4	24.6	11.5	0.0	28.5	20.4	0.0
Incr Delay (d2), s/veh	4.8	0.0	0.0	1.1	0.0	0.6	21.5	0.1	0.0	6.2	6.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.0	1.9	0.0	2.0	8.5	2.8	0.0	3.2	8.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	0.0	25.7	0.0	23.0	46.1	11.6	0.0	34.7	26.9	0.0
LnGrp LOS	C	A		C	A	C	D	B		C	C	
Approach Vol, veh/h	279			279			1059			1287		
Approach Delay, s/veh	30.3			24.3			24.8			28.0		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.7	35.8		18.9	20.8	27.7		18.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	14.0	28.0		16.0	17.0	25.0		16.0				
Max Q Clear Time (g_c+10), s	9.9	9.9		14.4	16.8	21.4		12.7				
Green Ext Time (p_c), s	0.2	4.3		0.2	0.0	2.3		0.4				

Intersection Summary

HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	2259	487	77	1886	48	412	223	41	33	285	23
Future Volume (veh/h)	51	2259	487	77	1886	48	412	223	41	33	285	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1856	1885	1870	1900	1841	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	51	2259	487	77	1886	48	412	223	41	33	285	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	3	3	1	2	0	4	1	0	0	0	0
Cap, veh/h	85	2543	1125	96	2577	65	278	386	71	72	228	18
Arrive On Green	0.05	0.72	0.72	0.05	0.73	0.73	0.16	0.25	0.25	0.04	0.13	0.13
Sat Flow, veh/h	1810	3526	1559	1795	3540	90	1753	1541	283	1810	1726	139
Grp Volume(v), veh/h	51	2259	487	77	942	992	412	0	264	33	0	308
Grp Sat Flow(s),veh/h/ln	1810	1763	1559	1795	1777	1853	1753	0	1824	1810	0	1865
Q Serve(g_s), s	4.1	74.5	19.0	6.4	46.1	47.0	23.8	0.0	19.0	2.7	0.0	19.8
Cycle Q Clear(g_c), s	4.1	74.5	19.0	6.4	46.1	47.0	23.8	0.0	19.0	2.7	0.0	19.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.16	1.00		0.07
Lane Grp Cap(c), veh/h	85	2543	1125	96	1293	1349	278	0	457	72	0	246
V/C Ratio(X)	0.60	0.89	0.43	0.80	0.73	0.74	1.48	0.00	0.58	0.46	0.00	1.25
Avail Cap(c_a), veh/h	97	2543	1125	96	1293	1349	278	0	457	97	0	246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.1	16.2	8.5	70.2	11.8	12.0	63.1	0.0	49.2	70.4	0.0	65.1
Incr Delay (d2), s/veh	6.4	5.1	1.2	37.5	3.6	3.6	234.9	0.0	2.2	3.3	0.0	142.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	29.2	6.5	3.9	18.3	19.4	28.8	0.0	9.0	1.3	0.0	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.5	21.3	9.7	107.7	15.5	15.6	298.0	0.0	51.4	73.8	0.0	207.1
LnGrp LOS	E	C	A	F	B	B	F		D	E		F
Approach Vol, veh/h		2797			2011			676			341	
Approach Delay, s/veh		20.3			19.0			201.7			194.2	
Approach LOS		C			B			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	113.1	28.0	24.4	11.2	114.1	10.2	42.2				
Change Period (Y+Rc), s	4.2	4.6	4.2	* 4.6	4.2	4.6	4.2	4.6				
Max Green Setting (Gmax), s	8.0	81.2	23.8	* 20	8.0	81.2	8.0	35.2				
Max Q Clear Time (g_c+I1), s	8.4	76.5	25.8	21.8	6.1	49.0	4.7	21.0				
Green Ext Time (p_c), s	0.0	4.6	0.0	0.0	0.0	26.0	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			51.1									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	828	30	168	752	20	35	224	326	23	169	29
Future Volume (veh/h)	11	828	30	168	752	20	35	224	326	23	169	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.93	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1870	1900	1900	1856	1900	1900	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	11	828	30	168	752	20	35	224	326	23	169	29
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	2	0	0	3	0	0	1	0	0	2	0
Cap, veh/h	27	893	32	204	1070	28	84	395	356	66	314	50
Arrive On Green	0.02	0.50	0.50	0.11	0.60	0.60	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1682	1791	65	1810	1797	48	152	1663	1500	82	1321	212
Grp Volume(v), veh/h	11	0	858	168	0	772	259	0	326	221	0	0
Grp Sat Flow(s), veh/h/ln	1682	0	1856	1810	0	1845	1816	0	1500	1615	0	0
Q Serve(g_s), s	0.5	0.0	36.5	7.7	0.0	24.6	0.0	0.0	17.9	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	36.5	7.7	0.0	24.6	10.3	0.0	17.9	10.5	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.03	0.14		1.00	0.10		0.13
Lane Grp Cap(c), veh/h	27	0	926	204	0	1098	479	0	356	430	0	0
V/C Ratio(X)	0.40	0.00	0.93	0.83	0.00	0.70	0.54	0.00	0.92	0.51	0.00	0.00
Avail Cap(c_a), veh/h	119	0	1013	227	0	1108	486	0	362	448	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.2	0.0	19.8	36.7	0.0	11.9	28.5	0.0	31.4	28.0	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.0	13.3	17.8	0.0	2.0	1.2	0.0	27.1	1.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	17.7	4.3	0.0	9.4	4.7	0.0	8.9	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	0.0	33.1	54.5	0.0	13.9	29.7	0.0	58.5	29.0	0.0	0.0
LnGrp LOS	D	A	C	D	A	B	C	A	E	C	A	A
Approach Vol, veh/h	869			940			585			221		
Approach Delay, s/veh	33.2			21.2			45.8			29.0		
Approach LOS	C			C			D			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.7	46.2		24.7	5.6	54.4		24.7				
Change Period (Y+Rc), s	4.2	4.0		* 4.6	* 4.2	4.0		4.6				
Max Green Setting (Gmax), s	46.2			* 21	* 6	50.8		20.4				
Max Q Clear Time (g_c+19, s)	38.5			12.5	2.5	26.6		19.9				
Green Ext Time (p_c), s	0.0	3.7		0.8	0.0	6.1		0.2				

Intersection Summary

HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	982	91	79	866	28	141	59	95	26	72	76
Future Volume (veh/h)	111	982	91	79	866	28	141	59	95	26	72	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.98		0.93	0.98		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1900	1870	1900	1900	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	111	982	91	79	866	28	141	59	95	26	72	76
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	1	0	0	2	0	0	0	0	0	2	0
Cap, veh/h	139	1004	801	121	938	30	68	13	385	51	112	383
Arrive On Green	0.08	0.53	0.53	0.13	1.00	1.00	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	1885	1504	1810	1797	58	0	50	1505	0	437	1500
Grp Volume(v), veh/h	111	982	91	79	0	894	200	0	95	98	0	76
Grp Sat Flow(s), veh/h/ln	1781	1885	1504	1810	0	1855	50	0	1505	437	0	1500
Q Serve(g_s), s	5.5	45.7	2.7	3.7	0.0	0.0	0.0	0.0	4.5	0.0	0.0	3.6
Cycle Q Clear(g_c), s	5.5	45.7	2.7	3.7	0.0	0.0	23.0	0.0	4.5	23.0	0.0	3.6
Prop In Lane	1.00		1.00	1.00		0.03	0.70		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	139	1004	801	121	0	968	81	0	385	162	0	383
V/C Ratio(X)	0.80	0.98	0.11	0.65	0.00	0.92	2.47	0.00	0.25	0.60	0.00	0.20
Avail Cap(c_a), veh/h	139	1005	802	141	0	989	81	0	385	162	0	383
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.00	0.59	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	20.5	10.5	38.0	0.0	0.0	41.4	0.0	26.6	28.0	0.0	26.3
Incr Delay (d2), s/veh	25.8	23.1	0.1	3.1	0.0	10.2	695.8	0.0	0.3	6.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	24.5	0.9	1.7	0.0	2.7	17.5	0.0	1.6	1.9	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.6	43.6	10.5	41.1	0.0	10.2	737.2	0.0	27.0	34.2	0.0	26.5
LnGrp LOS	E	D	B	D	A	B	F	A	C	C	A	C
Approach Vol, veh/h	1184			973			295			174		
Approach Delay, s/veh	43.2			12.7			508.5			30.9		
Approach LOS	D			B			F			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	51.9		27.0	11.0	51.0		27.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	48.0			23.0	7.0	48.0		23.0				
Max Q Clear Time (g_c+15), s	47.7			25.0	7.5	2.0		25.0				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	9.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	83.4											
HCM 6th LOS	F											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	965	65	56	823	58	62	94	56	133	77	50
Future Volume (veh/h)	30	965	65	56	823	58	62	94	56	133	77	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.97		0.93	0.97		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1870	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	30	965	65	56	823	58	62	94	56	133	77	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	2	0	2	0	0	0	0	0	0	0
Cap, veh/h	42	1004	68	72	1021	72	284	246	146	267	235	153
Arrive On Green	0.02	0.58	0.58	0.04	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	1737	117	1810	1719	121	1241	1084	646	1218	1036	673
Grp Volume(v), veh/h	30	0	1030	56	0	881	62	0	150	133	0	127
Grp Sat Flow(s), veh/h/ln	1810	0	1854	1810	0	1840	1241	0	1729	1218	0	1709
Q Serve(g_s), s	1.5	0.0	47.5	2.8	0.0	33.6	4.0	0.0	6.6	9.3	0.0	5.6
Cycle Q Clear(g_c), s	1.5	0.0	47.5	2.8	0.0	33.6	9.5	0.0	6.6	16.0	0.0	5.6
Prop In Lane	1.00		0.06	1.00		0.07	1.00		0.37	1.00		0.39
Lane Grp Cap(c), veh/h	42	0	1071	72	0	1093	284	0	392	267	0	387
V/C Ratio(X)	0.71	0.00	0.96	0.78	0.00	0.81	0.22	0.00	0.38	0.50	0.00	0.33
Avail Cap(c_a), veh/h	84	0	1071	84	0	1093	284	0	392	267	0	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.00	0.49	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	0.0	18.0	42.8	0.0	14.2	33.1	0.0	29.5	36.2	0.0	29.1
Incr Delay (d2), s/veh	3.9	0.0	12.1	26.2	0.0	6.4	1.8	0.0	2.8	6.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	21.3	1.7	0.0	14.2	1.3	0.0	3.0	3.2	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.5	0.0	30.1	69.0	0.0	20.6	34.8	0.0	32.3	42.8	0.0	31.3
LnGrp LOS	D	A	C	E	A	C	C	A	C	D	A	C
Approach Vol, veh/h	1060			937			212			260		
Approach Delay, s/veh	30.6			23.5			33.0			37.2		
Approach LOS	C			C			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	56.6		25.3	6.3	58.1		25.3				
Change Period (Y+Rc), s	4.2	4.6		4.9	* 4.2	4.6		* 4.9				
Max Green Setting (Gmax), s	4.2	52.0		20.1	* 4.2	52.0		* 20				
Max Q Clear Time (g_c+14), s	4.2	49.5		11.5	3.5	35.6		18.0				
Green Ext Time (p_c), s	0.0	2.0		0.4	0.0	8.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↰	↱	↰		↱↱
Traffic Volume (veh/h)	498	33	858	542	0	693
Future Volume (veh/h)	498	33	858	542	0	693
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1900	1885	1870	0	1885
Adj Flow Rate, veh/h	498	0	858	0	0	693
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	0	1	2	0	1
Cap, veh/h	551		937		0	1781
Arrive On Green	0.31	0.00	0.99	0.00	0.00	0.50
Sat Flow, veh/h	1795	1610	1885	1585	0	3770
Grp Volume(v), veh/h	498	0	858	0	0	693
Grp Sat Flow(s),veh/h/ln	1795	1610	1885	1585	0	1791
Q Serve(g_s), s	18.6	0.0	2.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s	18.6	0.0	2.0	0.0	0.0	8.4
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	551		937		0	1781
V/C Ratio(X)	0.90		0.92		0.00	0.39
Avail Cap(c_a), veh/h	667		937		0	1781
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.67	0.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	0.1	0.0	0.0	11.0
Incr Delay (d2), s/veh	14.0	0.0	10.8	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.9	0.0	0.0	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.2	0.0	11.0	0.0	0.0	11.6
LnGrp LOS	D		B		A	B
Approach Vol, veh/h	498		858			693
Approach Delay, s/veh	37.2		11.0			11.6
Approach LOS	D		B			B
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	39.4				39.4	26.1
Change Period (Y+Rc), s	4.6				4.6	4.6
Max Green Setting (Gmax), s	34.8				34.8	26.0
Max Q Clear Time (g_c+I1), s	4.0				10.4	20.6
Green Ext Time (p_c), s	7.7				5.1	0.9
Intersection Summary						
HCM 6th Ctrl Delay			17.6			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

CU_PM
21: Ocean St & Broadway

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	253	534	47	102	443	118	0	521	89	0	699	296
Future Volume (veh/h)	253	534	47	102	443	118	0	521	89	0	699	296
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1841	1900	1885	1870	0	1900	1900	0	1885	1900
Adj Flow Rate, veh/h	253	534	47	102	443	118	0	521	89	0	699	296
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	4	0	1	2	0	0	0	0	1	0
Cap, veh/h	290	716	63	130	472	126	0	1351	581	0	892	378
Arrive On Green	0.16	0.42	0.42	0.07	0.33	0.33	0.00	0.37	0.37	0.00	0.37	0.37
Sat Flow, veh/h	1810	1702	150	1810	1421	378	0	3705	1553	0	2478	1009
Grp Volume(v), veh/h	253	0	581	102	0	561	0	521	89	0	525	470
Grp Sat Flow(s), veh/h/ln	1810	0	1852	1810	0	1799	0	1805	1553	0	1791	1602
Q Serve(g_s), s	12.3	0.0	23.8	5.0	0.0	27.2	0.0	9.5	3.4	0.0	23.4	23.4
Cycle Q Clear(g_c), s	12.3	0.0	23.8	5.0	0.0	27.2	0.0	9.5	3.4	0.0	23.4	23.4
Prop In Lane	1.00		0.08	1.00		0.21	0.00		1.00	0.00		0.63
Lane Grp Cap(c), veh/h	290	0	779	130	0	598	0	1351	581	0	670	600
V/C Ratio(X)	0.87	0.00	0.75	0.78	0.00	0.94	0.00	0.39	0.15	0.00	0.78	0.78
Avail Cap(c_a), veh/h	322	0	803	161	0	620	0	1351	581	0	670	600
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.77	0.77
Uniform Delay (d), s/veh	36.9	0.0	22.0	41.1	0.0	29.2	0.0	20.6	18.7	0.0	24.9	24.9
Incr Delay (d2), s/veh	20.8	0.0	3.7	18.2	0.0	21.9	0.0	0.8	0.6	0.0	7.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	10.6	2.9	0.0	14.9	0.0	4.0	3.7	0.0	10.8	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	0.0	25.7	59.2	0.0	51.0	0.0	21.4	19.3	0.0	31.9	32.7
LnGrp LOS	E	A	C	E	A	D	A	C	B	A	C	C
Approach Vol, veh/h	834			663			610			995		
Approach Delay, s/veh	35.4			52.3			21.1			32.3		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.9			37.7	18.4	33.9		37.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	39.0			31.0	16.0	31.0		31.0				
Max Q Clear Time (g_c+11), s	25.8			11.5	14.3	29.2		25.4				
Green Ext Time (p_c), s	0.0	3.2		3.7	0.1	0.7		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				35.2								
HCM 6th LOS				D								

CU_PM
22: Riverside Ave/Dakota Ave & Soquel Ave

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	13	960	3	3	689	17	36	17	39	29	2	72
Future Volume (veh/h)	13	960	3	3	689	17	36	17	39	29	2	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.92	0.99		0.92	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1870	1796	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	960	3	3	689	17	36	17	39	29	2	72
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	1	0	0	2	7	0	0	0	0	0	0
Cap, veh/h	73	1406	4	67	1369	34	317	163	286	232	56	475
Arrive On Green	0.40	0.40	0.40	0.79	0.79	0.79	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	15	3547	11	3	3455	85	517	374	656	340	129	1088
Grp Volume(v), veh/h	509	0	467	373	0	336	92	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	1861	0	1712	1864	0	1678	1546	0	0	1556	0	0
Q Serve(g_s), s	0.0	0.0	12.5	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.3	0.0	12.5	3.8	0.0	3.8	1.7	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.03		0.01	0.01		0.05	0.39		0.42	0.28		0.70
Lane Grp Cap(c), veh/h	805	0	679	805	0	665	766	0	0	763	0	0
V/C Ratio(X)	0.63	0.00	0.69	0.46	0.00	0.50	0.12	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	805	0	679	805	0	665	766	0	0	763	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.76	0.00	0.76	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.7	0.0	13.8	3.8	0.0	3.8	9.2	0.0	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	3.8	0.0	5.6	1.5	0.0	2.1	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	5.1	1.2	0.0	1.2	0.6	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	19.4	5.3	0.0	5.9	9.5	0.0	0.0	9.7	0.0	0.0
LnGrp LOS	B	A	B	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h	976					709		92		103		
Approach Delay, s/veh	18.4					5.6		9.5		9.7		
Approach LOS	B					A		A		A		
Timer - Assigned Phs	2		4			6		8				
Phs Duration (G+Y+Rc), s	26.4		28.6			26.4		28.6				
Change Period (Y+Rc), s	4.6		4.6			4.6		4.6				
Max Green Setting (Gmax), s	21.8		24.0			21.8		24.0				
Max Q Clear Time (g_c+I1), s	14.5		3.7			5.8		4.0				
Green Ext Time (p_c), s	3.6		0.4			4.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay	12.7											
HCM 6th LOS	B											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	601	129	188	424	83	318	817	411	468	496	269
Future Volume (veh/h)	259	601	129	188	424	83	318	817	411	468	496	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1900	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	259	601	129	188	424	83	318	817	411	468	496	269
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0	1	1	1
Cap, veh/h	261	708	152	217	781	335	350	814	356	473	1066	459
Arrive On Green	0.15	0.24	0.24	0.12	0.22	0.22	0.19	0.23	0.23	0.26	0.30	0.30
Sat Flow, veh/h	1795	2908	622	1810	3582	1535	1810	3582	1568	1795	3582	1542
Grp Volume(v), veh/h	259	369	361	188	424	83	318	817	411	468	496	269
Grp Sat Flow(s), veh/h/ln	1795	1791	1739	1810	1791	1535	1810	1791	1568	1795	1791	1542
Q Serve(g_s), s	15.8	21.6	21.8	11.2	11.5	4.9	18.9	25.0	25.0	28.6	12.4	16.3
Cycle Q Clear(g_c), s	15.8	21.6	21.8	11.2	11.5	4.9	18.9	25.0	25.0	28.6	12.4	16.3
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	436	424	217	781	335	350	814	356	473	1066	459
V/C Ratio(X)	0.99	0.85	0.85	0.87	0.54	0.25	0.91	1.00	1.15	0.99	0.47	0.59
Avail Cap(c_a), veh/h	261	436	424	230	781	335	510	814	356	473	1066	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	0.51	0.51	0.51	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	39.6	39.7	47.5	38.1	35.5	43.4	42.5	42.5	40.3	31.5	32.9
Incr Delay (d2), s/veh	41.2	11.9	12.5	14.5	1.4	0.9	10.4	29.6	92.6	38.2	1.5	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.9	10.7	5.9	5.2	1.9	9.4	14.3	18.7	17.4	5.6	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.1	51.5	52.2	62.1	39.5	36.4	53.8	72.1	135.1	78.6	33.0	38.3
LnGrp LOS	F	D	D	E	D	D	D	F	F	E	C	D
Approach Vol, veh/h	989				695				1546			
Approach Delay, s/veh	61.3				45.2				85.1			
Approach LOS	E				D				F			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	30.8	33.0	29.0	20.0	28.0	25.3	36.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	29.0	25.0	16.0	24.0	31.0	23.0				
Max Q Clear Time (g_c+I1), s	4.0	23.8	30.6	27.0	17.8	13.5	20.9	18.3				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	2.2	0.4	1.8				

Intersection Summary

HCM 6th Ctrl Delay	64.3
HCM 6th LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	843	112	101	579	34	56	143	79	58	170	116
Future Volume (veh/h)	163	843	112	101	579	34	56	143	79	58	170	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.92	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1870	1885	1870
Adj Flow Rate, veh/h	163	843	112	101	579	34	56	143	79	58	170	116
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	2	1	2
Cap, veh/h	414	1621	215	153	646	38	93	161	76	122	280	349
Arrive On Green	0.23	0.52	0.52	0.08	0.37	0.37	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3147	418	1810	1739	102	137	705	334	253	1227	1525
Grp Volume(v), veh/h	163	480	475	101	0	613	278	0	0	228	0	116
Grp Sat Flow(s),veh/h/ln	1810	1791	1774	1810	0	1842	1176	0	0	1480	0	1525
Q Serve(g_s), s	5.3	12.4	12.4	3.8	0.0	22.0	6.9	0.0	0.0	0.0	0.0	4.4
Cycle Q Clear(g_c), s	5.3	12.4	12.4	3.8	0.0	22.0	16.0	0.0	0.0	9.1	0.0	4.4
Prop In Lane	1.00		0.24	1.00		0.06	0.20		0.28	0.25		1.00
Lane Grp Cap(c), veh/h	414	923	914	153	0	684	331	0	0	403	0	349
V/C Ratio(X)	0.39	0.52	0.52	0.66	0.00	0.90	0.84	0.00	0.00	0.57	0.00	0.33
Avail Cap(c_a), veh/h	414	923	914	414	0	684	331	0	0	403	0	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.35	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	11.2	11.2	31.0	0.0	20.7	27.4	0.0	0.0	24.0	0.0	22.5
Incr Delay (d2), s/veh	1.0	0.7	0.7	4.7	0.0	16.7	17.4	0.0	0.0	1.8	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.5	4.4	1.8	0.0	11.7	6.1	0.0	0.0	3.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	12.0	12.0	35.8	0.0	37.5	44.8	0.0	0.0	25.8	0.0	23.1
LnGrp LOS	C	B	B	D	A	D	D	A	A	C	A	C
Approach Vol, veh/h	1118				714		278				344	
Approach Delay, s/veh	13.7				37.2		44.8				24.9	
Approach LOS	B				D		D				C	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	9.9	40.1	20.0		20.0	30.0	20.0					
Change Period (Y+Rc), s	4.0	4.0	4.0		4.0	4.0	4.0					
Max Green Setting (Gmax), s	6.0	26.0	16.0		16.0	26.0	16.0					
Max Q Clear Time (g_c+15), s	15.8	14.4	11.1		7.3	24.0	18.0					
Green Ext Time (p_c), s	0.1	4.8	0.8		0.3	0.8	0.0					

Intersection Summary

HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

CU_PM
25: Seabright Ave & Soquel Ave

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1075	125	179	585	16	217	45	223	90	128	70
Future Volume (veh/h)	32	1075	125	179	585	16	217	45	223	90	128	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.89	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1870	1885	1900	1885	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	32	1075	125	179	585	16	217	45	223	90	128	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	2	1	0	1	0	0	0	2	0
Cap, veh/h	40	1217	141	196	853	23	257	53	245	129	183	257
Arrive On Green	0.02	0.38	0.38	0.11	0.47	0.47	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3202	372	1781	1823	50	1511	313	1438	757	1076	1511
Grp Volume(v), veh/h	32	600	600	179	0	601	262	0	223	218	0	70
Grp Sat Flow(s), veh/h/ln	1810	1791	1783	1781	0	1872	1824	0	1438	1833	0	1511
Q Serve(g_s), s	1.8	31.3	31.4	9.9	0.0	25.2	13.9	0.0	15.2	11.2	0.0	4.0
Cycle Q Clear(g_c), s	1.8	31.3	31.4	9.9	0.0	25.2	13.9	0.0	15.2	11.2	0.0	4.0
Prop In Lane	1.00		0.21	1.00		0.03	0.83		1.00	0.41		1.00
Lane Grp Cap(c), veh/h	40	681	678	196	0	876	310	0	245	312	0	257
V/C Ratio(X)	0.80	0.88	0.88	0.91	0.00	0.69	0.84	0.00	0.91	0.70	0.00	0.27
Avail Cap(c_a), veh/h	72	681	678	196	0	876	310	0	245	312	0	257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.7	28.9	29.0	44.0	0.0	20.9	40.2	0.0	40.8	39.1	0.0	36.1
Incr Delay (d2), s/veh	29.1	15.4	15.7	40.9	0.0	4.4	23.6	0.0	38.6	12.3	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	15.8	15.9	6.6	0.0	11.6	8.2	0.0	7.9	6.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	44.3	44.6	84.9	0.0	25.2	63.8	0.0	79.4	51.4	0.0	38.7
LnGrp LOS	E	D	D	F	A	C	E	A	E	D	A	D
Approach Vol, veh/h	1232			780			485			288		
Approach Delay, s/veh	45.3			38.9			71.0			48.3		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	43.0		21.0	6.2	51.8		21.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	1.0	38.0		17.0	4.0	45.0		17.0				
Max Q Clear Time (g_c+I1), s	1.0	33.4		17.2	3.8	27.2		13.2				
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	3.9		0.5				

Intersection Summary

HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D



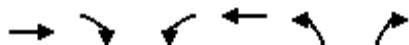
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↱		↰↱	↱		↰↱	↱		↰↱	↱	↰↱
Traffic Volume (veh/h)	535	1695	38	63	1489	36	19	127	30	293	233	75
Future Volume (veh/h)	535	1695	38	63	1489	36	19	127	30	293	233	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	535	1695	38	63	1489	0	19	127	30	293	233	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	604	1883	42	81	1424		316	446	105	373	570	
Arrive On Green	0.17	0.52	0.52	0.04	0.39	0.00	0.30	0.30	0.30	0.30	0.30	0.00
Sat Flow, veh/h	3510	3610	81	1810	3705	0	1166	1486	351	1249	1900	1610
Grp Volume(v), veh/h	535	846	887	63	1489	0	19	0	157	293	233	0
Grp Sat Flow(s), veh/h/ln	1755	1805	1885	1810	1805	0	1166	0	1837	1249	1900	1610
Q Serve(g_s), s	13.4	37.9	38.3	3.1	35.5	0.0	1.2	0.0	5.9	21.1	8.8	0.0
Cycle Q Clear(g_c), s	13.4	37.9	38.3	3.1	35.5	0.0	10.0	0.0	5.9	27.0	8.8	0.0
Prop In Lane	1.00		0.04	1.00		0.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	604	942	984	81	1424		316	0	551	373	570	
V/C Ratio(X)	0.89	0.90	0.90	0.77	1.05		0.06	0.00	0.28	0.79	0.41	
Avail Cap(c_a), veh/h	624	942	984	101	1424		316	0	551	373	570	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	19.4	19.4	42.5	27.2	0.0	29.1	0.0	24.1	34.4	25.1	0.0
Incr Delay (d2), s/veh	13.4	13.1	13.0	16.6	34.5	0.0	0.1	0.0	0.3	9.7	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	6.8	17.9	18.8	1.7	21.2	0.0	0.3	0.0	2.6	7.2	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.8	32.5	32.5	59.1	61.7	0.0	29.2	0.0	24.4	44.2	25.3	0.0
LnGrp LOS	D	C	C	E	F		C	A	C	D	C	
Approach Vol, veh/h	2268			1552			176			526		
Approach Delay, s/veh	36.6			61.6			24.9			35.8		
Approach LOS	D			E			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	51.0		31.0	19.5	39.5		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	46.0		27.0	16.0	35.0		27.0				
Max Q Clear Time (g_c+15), s	40.3			29.0	15.4	37.5		12.0				
Green Ext Time (p_c), s	0.0	4.7		0.0	0.1	0.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (veh/h)	1755	93	226	1416	146	433
Future Volume (veh/h)	1755	93	226	1416	146	433
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1870	1900	1870	1900	1885
Adj Flow Rate, veh/h	1755	93	226	1416	146	433
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	2	0	2	0	1
Cap, veh/h	1764	93	241	2448	402	568
Arrive On Green	0.68	0.68	0.13	0.69	0.22	0.22
Sat Flow, veh/h	3546	181	1810	3647	1810	1598
Grp Volume(v), veh/h	902	946	226	1416	146	433
Grp Sat Flow(s), veh/h/ln	1791	1842	1810	1777	1810	1598
Q Serve(g_s), s	44.0	46.0	11.1	18.5	6.1	20.0
Cycle Q Clear(g_c), s	44.0	46.0	11.1	18.5	6.1	20.0
Prop In Lane		0.10	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	915	941	241	2448	402	568
V/C Ratio(X)	0.99	1.00	0.94	0.58	0.36	0.76
Avail Cap(c_a), veh/h	915	941	241	2448	402	568
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.66	0.66	1.00	1.00
Uniform Delay (d), s/veh	14.1	14.4	38.6	7.2	29.6	25.6
Incr Delay (d2), s/veh	14.6	18.4	30.9	0.2	2.5	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	17.0	6.9	5.8	2.9	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.7	32.8	69.5	7.5	32.1	35.0
LnGrp LOS	C	F	E	A	C	C
Approach Vol, veh/h	1848			1642	579	
Approach Delay, s/veh	30.8			16.0	34.3	
Approach LOS	C			B	C	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	60.0	50.0		66.0	24.0	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	46.0	46.0		62.0	20.0	
Max Q Clear Time (g_c+I1), s	48.0	48.0		20.5	22.0	
Green Ext Time (p_c), s	0.0	0.0		15.5	0.0	
Intersection Summary						
HCM 6th Ctrl Delay			25.3			
HCM 6th LOS			C			

CU_PM
28: Hagemann Ave/Trevethan Ave & Soquel Ave

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	2092	53	22	1503	24	77	14	34	74	14	86
Future Volume (veh/h)	69	2092	53	22	1503	24	77	14	34	74	14	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	69	2092	53	22	1503	24	77	14	34	74	14	86
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	89	2372	60	43	2288	36	208	44	70	159	44	143
Arrive On Green	0.10	1.00	1.00	0.05	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	3565	90	1810	3577	57	804	248	393	575	246	802
Grp Volume(v), veh/h	69	1045	1100	22	746	781	125	0	0	174	0	0
Grp Sat Flow(s), veh/h/ln	1810	1791	1864	1810	1777	1857	1445	0	0	1623	0	0
Q Serve(g_s), s	3.3	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	0.0	1.1	0.0	0.0	6.8	0.0	0.0	8.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.03	0.62		0.27	0.43		0.49
Lane Grp Cap(c), veh/h	89	1192	1241	43	1137	1188	322	0	0	346	0	0
V/C Ratio(X)	0.78	0.88	0.89	0.52	0.66	0.66	0.39	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	181	1192	1241	101	1137	1188	322	0	0	346	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.20	0.20	0.20	0.76	0.76	0.76	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.1	0.0	0.0	42.4	0.0	0.0	33.1	0.0	0.0	33.8	0.0	0.0
Incr Delay (d2), s/veh	2.9	2.1	2.2	7.2	2.3	2.2	3.5	0.0	0.0	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.7	0.8	0.6	0.7	0.7	2.7	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	2.1	2.2	49.6	2.3	2.2	36.6	0.0	0.0	38.9	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h	2214			1549			125			174		
Approach Delay, s/veh	3.4			2.9			36.6			38.9		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	63.9			20.0	8.4	61.6		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	57.0			16.0	9.0	53.0		16.0				
Max Q Clear Time (g_c+I1), s	2.0			10.3	5.3	2.0		8.8				
Green Ext Time (p_c), s	0.0	35.1		0.3	0.0	17.2		0.2				

Intersection Summary

HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A

CU_PM
29: Park Way & Soquel Ave

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	2147	30	12	1409	28	53	18	26	128	7	70
Future Volume (veh/h)	39	2147	30	12	1409	28	53	18	26	128	7	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1870	1856	1900	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	39	2147	30	12	1409	28	53	18	26	128	7	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	2	3	0	0	0	0	0	3
Cap, veh/h	101	2339	33	26	2176	43	181	64	67	216	15	86
Arrive On Green	0.06	0.65	0.65	0.01	0.61	0.61	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3586	50	1810	3560	71	717	389	405	915	88	520
Grp Volume(v), veh/h	39	1061	1116	12	703	734	97	0	0	205	0	0
Grp Sat Flow(s), veh/h/ln	1810	1777	1859	1810	1777	1854	1511	0	0	1524	0	0
Q Serve(g_s), s	1.9	46.3	47.1	0.6	22.9	23.0	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	1.9	46.3	47.1	0.6	22.9	23.0	4.9	0.0	0.0	11.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.04	0.55		0.27	0.62		0.34
Lane Grp Cap(c), veh/h	101	1159	1213	26	1086	1133	312	0	0	317	0	0
V/C Ratio(X)	0.39	0.92	0.92	0.46	0.65	0.65	0.31	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	121	1159	1213	101	1086	1133	346	0	0	350	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	13.5	13.6	44.0	11.3	11.3	33.3	0.0	0.0	35.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	5.4	5.5	4.0	2.6	2.5	0.6	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	17.0	18.1	0.3	8.7	9.1	1.9	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	18.9	19.1	48.0	13.8	13.8	33.8	0.0	0.0	39.4	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	C	A	A	D	A	A
Approach Vol, veh/h	2216			1449			97			205		
Approach Delay, s/veh	19.4			14.1			33.8			39.4		
Approach LOS	B			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	62.7		18.9	9.0	59.0		18.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	56.0		17.0	6.0	55.0		17.0				
Max Q Clear Time (g_c+12.6)	12.6	49.1		6.9	3.9	25.0		13.4				
Green Ext Time (p_c), s	0.0	6.4		0.3	0.0	12.9		0.4				

Intersection Summary

HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

CU_PM
30: Capitola Rd/Driveway & Soquel Ave

CU_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	920	1149	79	672	25	708	16	77	47	25	28
Future Volume (veh/h)	20	920	1149	79	672	25	708	16	77	47	25	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1885	1870	1870	1900	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	20	920	0	79	672	25	719	0	0	47	25	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	1	2	2	0	1	0	0	0	0	0
Cap, veh/h	35	2008		79	2058	76	718	0		86	46	111
Arrive On Green	0.02	0.57	0.00	0.04	0.59	0.59	0.20	0.00	0.00	0.07	0.07	0.07
Sat Flow, veh/h	1810	3554	1598	1781	3488	130	3591	0	1610	1201	639	1543
Grp Volume(v), veh/h	20	920	0	79	342	355	719	0	0	72	0	28
Grp Sat Flow(s), veh/h/ln	1810	1777	1598	1781	1777	1841	1795	0	1610	1840	0	1543
Q Serve(g_s), s	1.5	20.5	0.0	6.0	13.2	13.2	27.0	0.0	0.0	5.1	0.0	2.3
Cycle Q Clear(g_c), s	1.5	20.5	0.0	6.0	13.2	13.2	27.0	0.0	0.0	5.1	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	35	2008		79	1048	1086	718	0		132	0	111
V/C Ratio(X)	0.57	0.46		1.00	0.33	0.33	1.00	0.00		0.54	0.00	0.25
Avail Cap(c_a), veh/h	67	2008		79	1048	1086	718	0		300	0	251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.40	0.40	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.6	17.2	0.0	64.5	14.1	14.1	54.0	0.0	0.0	60.5	0.0	59.2
Incr Delay (d2), s/veh	2.1	0.3	0.0	100.4	0.8	0.8	33.9	0.0	0.0	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.4	0.0	4.9	5.5	5.7	15.5	0.0	0.0	2.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	17.5	0.0	164.9	14.9	14.9	87.9	0.0	0.0	61.8	0.0	59.6
LnGrp LOS	E	B		F	B	B	F	A		E	A	E
Approach Vol, veh/h	940			776			719			100		
Approach Delay, s/veh	18.6			30.1			87.9			61.2		
Approach LOS	B			C			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	80.3			13.7	6.6	83.6		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	64.0			22.0	5.0	65.0		27.0				
Max Q Clear Time (g_c+1/3), s	22.5			7.1	3.5	15.2		29.0				
Green Ext Time (p_c), s	0.0	8.1		0.2	0.0	5.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	160	89	127	24	27	82	53	794	28	53	862	108
Future Volume (veh/h)	160	89	127	24	27	82	53	794	28	53	862	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	160	89	127	24	27	82	53	794	28	53	862	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	129	315	118	133	214	124	984	35	124	893	112
Arrive On Green	0.20	0.20	0.20	0.13	0.13	0.13	0.07	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1183	658	1610	874	983	1586	1810	3557	125	1810	3228	404
Grp Volume(v), veh/h	249	0	127	51	0	82	53	403	419	53	482	488
Grp Sat Flow(s), veh/h/ln	1841	0	1610	1856	0	1586	1810	1805	1877	1810	1805	1827
Q Serve(g_s), s	7.5	0.0	4.1	1.4	0.0	2.8	1.7	12.3	12.3	1.7	15.6	15.6
Cycle Q Clear(g_c), s	7.5	0.0	4.1	1.4	0.0	2.8	1.7	12.3	12.3	1.7	15.6	15.6
Prop In Lane	0.64		1.00	0.47		1.00	1.00		0.07	1.00		0.22
Lane Grp Cap(c), veh/h	360	0	315	250	0	214	124	499	519	124	499	506
V/C Ratio(X)	0.69	0.00	0.40	0.20	0.00	0.38	0.43	0.81	0.81	0.43	0.97	0.97
Avail Cap(c_a), veh/h	882	0	772	282	0	241	214	524	545	214	499	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	20.8	22.8	0.0	23.4	26.5	20.0	20.0	26.5	21.2	21.2
Incr Delay (d2), s/veh	2.9	0.0	1.0	0.4	0.0	1.1	0.9	8.4	8.1	0.9	31.3	31.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.3	0.0	1.5	0.6	0.0	1.0	0.7	5.8	6.0	0.7	10.3	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	0.0	21.8	23.2	0.0	24.5	27.3	28.4	28.1	27.3	52.5	52.3
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	D	D
Approach Vol, veh/h	376		133		875		1023					
Approach Delay, s/veh	23.9		24.0		28.2		51.1					
Approach LOS	C		C		C		D					
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.0	21.8	16.2		8.7	21.8	12.6					
Change Period (Y+Rc), s	4.6	* 5.4	4.6		4.6	5.4	4.6					
Max Green Setting (Gmax), s	7.0	* 17	28.4		7.0	16.4	9.0					
Max Q Clear Time (g_c+13), s	14.3		9.5		3.7	17.6	4.8					
Green Ext Time (p_c), s	0.0	1.3	2.2		0.0	0.0	0.2					

Intersection Summary

HCM 6th Ctrl Delay 37.0

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 12.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	301	117	107	18	2	149	48	120	1	38	2
Future Vol, veh/h	18	301	117	107	18	2	149	48	120	1	38	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	2	5	3	0	0	1	0	0	0	0	0
Mvmt Flow	18	301	117	107	18	2	149	48	120	1	38	2
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	12.9	11.3	13	9.4
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	47%	6%	0%	86%	0%	2%
Vol Thru, %	15%	94%	0%	14%	0%	93%
Vol Right, %	38%	0%	100%	0%	100%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	317	319	117	125	2	41
LT Vol	149	18	0	107	0	1
Through Vol	48	301	0	18	0	38
RT Vol	120	0	117	0	2	2
Lane Flow Rate	317	319	117	125	2	41
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.469	0.511	0.164	0.229	0.003	0.068
Departure Headway (Hd)	5.33	5.762	5.059	6.603	5.404	5.947
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	675	625	709	544	662	601
Service Time	3.362	3.489	2.786	4.342	3.142	3.994
HCM Lane V/C Ratio	0.47	0.51	0.165	0.23	0.003	0.068
HCM Control Delay	13	14.4	8.8	11.3	8.2	9.4
HCM Lane LOS	B	B	A	B	A	A
HCM 95th-tile Q	2.5	2.9	0.6	0.9	0	0.2

Intersection						
Int Delay, s/veh	5.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	70	733	70	30	606
Future Vol, veh/h	90	70	733	70	30	606
Conflicting Peds, #/hr	7	1	0	43	43	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	0	0	4
Mvmt Flow	90	70	733	70	30	606
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1484	812	0	0	846	0
Stage 1	811	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Critical Hdwy	6.42	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	137	377	-	-	800	-
Stage 1	437	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	124	363	-	-	771	-
Mov Cap-2 Maneuver	124	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	56.8	0	0.5			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 124 363	771	-		
HCM Lane V/C Ratio	-	- 0.726 0.193	0.039	-		
HCM Control Delay (s)	-	- 87.6 17.3	9.9	0		
HCM Lane LOS	-	- F C	A	A		
HCM 95th %tile Q(veh)	-	- 4.1 0.7	0.1	-		

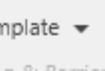
Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	20	783	0	0	696
Future Vol, veh/h	60	20	783	0	0	696
Conflicting Peds, #/hr	22	0	0	54	54	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	60	20	783	0	0	696
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1153	783	0	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.6	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	207	397	-	0	0	-
Stage 1	454	-	-	0	0	-
Stage 2	675	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	203	397	-	-	-	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	28.6	0	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 231		-			
HCM Lane V/C Ratio	- 0.346		-			
HCM Control Delay (s)	- 28.6		-			
HCM Lane LOS	- D		-			
HCM 95th %tile Q(veh)	- 1.5		-			

Appendix G

*Analysis Worksheets for Cumulative (2030) Conditions
Queueing Report*



HCM 2000 Signing Settings						
	EBL	EBT	WBT	WBR	SBL	SBR
Lanes and Sharing (#RL)						
Traffic Volume (vph)	82	549	524	10	20	85
Future Volume (vph)	82	549	524	10	20	85
Sign Control	—	Free	Free	—	Stop	—
Median Width (ft)	—	12	12	—	12	—
TWLTL Median	—			—		—
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	4.2	—	—	—	6.4	6.3
Follow Up Time, tF (s)	2.3	—	—	—	3.5	3.4
Volume to Capacity Ratio	0.08	0.32	0.31	0.31	0.28	0.28
Control Delay (s)	9.0	0.0	0.0	0.0	18.4	18.4
Level of Service	A	A	A	A	C	C
Queue Length 95th (ft)	7	0	0	0	28	28
Approach Delay (s)	—	1.2	0.0	—	18.4	—

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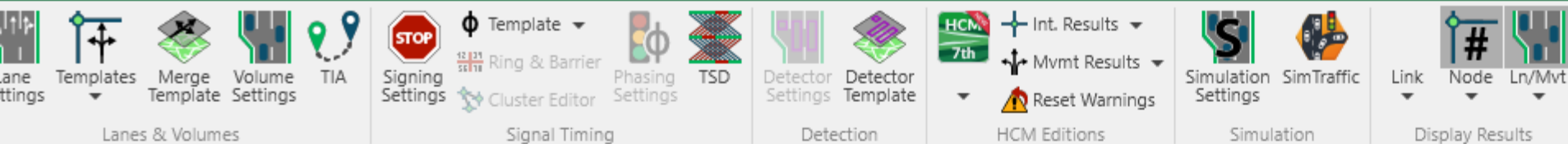


Node
▼

Ln/Mvt

2 Pacific St & Spruce St

HCM 2000 Signing Settings												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes and Sharing (#RL)	▼	↕▼	▼	▼	↕▼	▼	▼	↕▼	▼	▼	↕▼	▼
Traffic Volume (vph)	9	10	10	10	10	8	10	167	20	30	130	7
Future Volume (vph)	9	10	10	10	10	8	10	167	20	30	130	7
Sign Control	—	Stop ▼	—	—	Stop ▼	—	—	Free ▼	—	—	Free ▼	—
Median Width (ft)	—	0	—	—	0	—	—	12	—	—	12	—
TWLTL Median	—		—	—		—	—		—	—		—
Right Turn Channelized	—	—	None ▼	—	—	None ▼	—	—	None ▼	—	—	None ▼
Critical Gap, tC (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	—	—	4.1	—	—
Follow Up Time, tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	—	—	2.2	—	—
Volume to Capacity Ratio	0.06	0.06	0.06	0.05	0.05	0.05	0.01	0.01	0.01	0.02	0.02	0.02
Control Delay (s)	12.3	12.3	12.3	12.0	12.0	12.0	0.1	0.5	0.5	0.2	1.5	1.5
Level of Service	B	B	B	B	B	B	A	A	A	A	A	A
Queue Length 95th (ft)	4	4	4	4	4	4	1	1	1	2	2	2
Approach Delay (s)	—	12.3	—	—	12.0	—	—	0.5	—	—	1.5	—



3 Front St & Spruce St/Laurel St Ext

HCM 2000 Signing Settings												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes and Sharing (#RL)												
Traffic Volume (vph)	29	20	10	10	0	6	10	543	10	61	524	24
Future Volume (vph)	29	20	10	10	0	6	10	543	10	61	524	24
Sign Control	—	Stop	—	—	Stop	—	—	Free	—	—	Free	—
Median Width (ft)	—	0	—	—	0	—	—	12	—	—	12	—
TWLTL Median	—		—	—		—	—		—	—		—
Right Turn Channelized	—	—	None	—	—	None	—	—	None	—	—	None
Critical Gap, tC (s)	7.1	6.5	6.2	7.1	—	6.2	4.1	—	—	4.1	—	—
Follow Up Time, tF (s)	3.5	4.0	3.3	3.5	—	3.3	2.2	—	—	2.2	—	—
Volume to Capacity Ratio	0.4	0.4	0.4	0.11	—	0.11	0.01	0.01	0.01	0.06	0.06	0.06
Control Delay (s)	44.4	44.4	44.4	32.1	—	32.1	0.1	0.3	0.3	0.8	1.6	1.6
Level of Service	E	E	E	D	—	D	A	A	A	A	A	A
Queue Length 95th (ft)	43	43	43	9	—	9	1	1	1	5	5	5
Approach Delay (s)	—	44.4	—	—	32.1	—	—	0.3	—	—	1.6	—



STOP HCM 2000 Signing Settings	 EBL	 EBT	 EBR	 WBL	 WBT	 WBR	 NBL	 NBT	 NBR	 SBL	 SBT	 SBR
Lanes and Sharing (#RL)	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
Traffic Volume (vph)	68	1195	26	0	898	94	0	0	14	0	0	116
Future Volume (vph)	68	1195	26	0	898	94	0	0	14	0	0	116
Sign Control	—	Free ▼	—	—	Free ▼	—	—	Stop ▼	—	—	Stop ▼	—
Median Width (ft)	—	12	—	—	12	—	—	0	—	—	0	—
TWLT Median	—	☐	—	—	☒	—	—	☐	—	—	☐	—
Right Turn Channelized	—	—	None ▼	—	—	None ▼	—	—	None ▼	—	—	None ▼
Critical Gap, tC (s)	4.1	—	—	—	—	—	—	—	6.2	—	—	6.2
Follow Up Time, tF (s)	2.2	—	—	—	—	—	—	—	3.3	—	—	3.3
Volume to Capacity Ratio	0.13	0.72	0.72	—	0.58	0.58	—	—	0.1	—	—	0.39
Control Delay (s)	13.0	0.0	0.0	—	0.0	0.0	—	—	34.9	—	—	25.0
Level of Service	B	A	A	—	A	A	—	—	D	—	—	C
Queue Length 95th (ft)	11	0	0	—	0	0	—	—	9	—	—	45
Approach Delay (s)	—	0.7	—	—	0.0	—	—	34.9	—	—	25.0	—



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	162	1119	64	982	91	59	140	97	122
v/c Ratio	0.74	0.86	0.50	0.83	0.10	0.57	0.55	0.81	0.62
Control Delay (s/veh)	71.2	25.2	67.0	26.2	5.8	67.2	48.9	91.0	44.7
Queue Delay	0.0	8.5	0.0	49.3	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.2	33.7	67.0	75.5	5.8	67.2	48.9	91.0	44.7
Queue Length 50th (ft)	120	638	49	583	13	43	90	74	60
Queue Length 95th (ft)	#256	#1145	96	#945	37	84	145	128	118
Internal Link Dist (ft)		354		225			212		206
Turn Bay Length (ft)	100		50		50	50		50	
Base Capacity (vph)	219	1294	130	1187	953	155	370	179	274
Starvation Cap Reductn	0	155	0	379	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.98	0.49	1.22	0.10	0.38	0.38	0.54	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	165	1025	227	830	195	4	228	254	202	366	262
v/c Ratio	0.71	0.65	0.83	0.94	0.24	0.04	0.76	0.70	0.86	0.65	0.46
Control Delay (s/veh)	75.1	35.1	82.3	58.5	13.6	63.3	71.8	37.0	91.0	48.1	21.0
Queue Delay	0.0	50.2	0.0	5.4	0.0	0.0	0.0	0.4	3.9	0.0	0.0
Total Delay (s/veh)	75.1	85.3	82.3	63.9	13.6	63.3	71.8	37.4	95.0	48.1	21.0
Queue Length 50th (ft)	144	392	207	786	42	4	201	110	180	278	88
Queue Length 95th (ft)	#289	530	m#285	#1083	m91	17	277	196	#304	403	177
Internal Link Dist (ft)		225		487			220			149	
Turn Bay Length (ft)	100		300			100		50	100		100
Base Capacity (vph)	233	1584	302	879	809	103	427	462	256	609	608
Starvation Cap Reductn	0	678	0	34	0	0	0	0	0	0	0
Spillback Cap Reductn	0	34	0	0	0	0	0	33	19	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	1.13	0.75	0.98	0.24	0.04	0.53	0.59	0.85	0.60	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

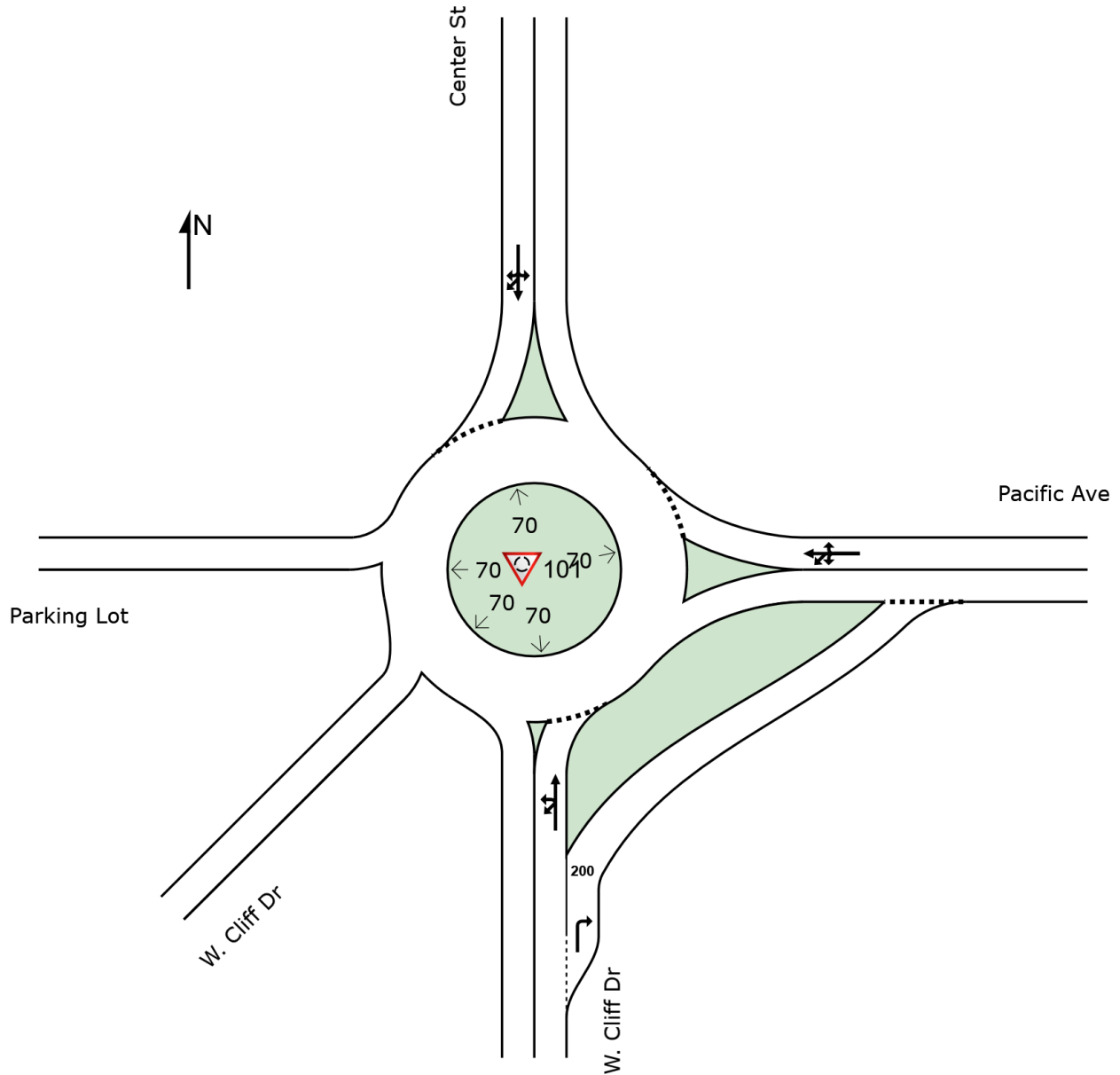
m Volume for 95th percentile queue is metered by upstream signal.

SITE LAYOUT

 Site: 101 [INT #9 CU_PM (Site Folder: Cumulative Conditions)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and
Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 Site: 101 [INT #9 CU_PM (Site Folder: Cumulative Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance																
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.	
	[Total veh/h	HV] %	[Total veh/h	HV] %		veh/h	v/c			%	sec			[Veh	Dist] ft	%
South: W. Cliff Dr																
Lane 1 ^d	199	3.0	199	3.0	1332	0.149	100	3.8	LOS A	0.7	16.6	Full	1600	0.0	0.0	
Lane 2	578	3.0	578	3.0	1292	0.447	100	6.7	LOS A	3.2	81.6		Short	200	0.0	NA
Approach	777	3.0	777	3.0		0.447		6.0	LOS A	3.2	81.6					
East: Pacific Ave																
Lane 1 ^d	719	3.0	719	3.0	1083	0.664	100	12.6	LOS B	8.3	212.7	Full	1600	0.0	0.0	
Approach	719	3.0	719	3.0		0.664		12.6	LOS B	8.3	212.7					
North: Center St																
Lane 1 ^d	437	3.0	437	3.0	644	0.679	100	19.7	LOS C	5.6	144.4	Full	1600	0.0	0.0	
Approach	437	3.0	437	3.0		0.679		19.7	LOS C	5.6	144.4					
All Vehicles	1933	3.0	1933	3.0		0.679		11.5	LOS B	8.3	212.7					

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

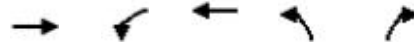
Approach Lane Flows (veh/h)											
South: W. Cliff Dr											
Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	5	175	-	199	3.0	1332	0.149	100	NA	NA
Lane 2	-	-	-	578	578	3.0	1292	0.447	100	0.0	1
Approach	19	5	175	578	777	3.0	0.447				
East: Pacific Ave											
Mov. From E To Exit:	L2 S	L1 SW	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	467	181	5	65	719	3.0	1083	0.664	100	NA	NA
Approach	467	181	5	65	719	3.0	0.664				
North: Center St											

Mov. From N To Exit:	L2	T1	R1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	171	225	5	437	3.0	644	0.679	100	NA	NA
Approach	36	171	225	5	437	3.0		0.679			
Total %HV Deg.Satn (v/c)											
All Vehicles	1933	3.0		0.679							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h		Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	907	423	691	98	621
v/c Ratio	1.07	0.46	0.24	0.40	0.83
Control Delay (s/veh)	101.2	5.0	0.6	62.4	14.5
Queue Delay	0.0	0.9	0.9	0.0	9.1
Total Delay (s/veh)	101.2	5.8	1.5	62.4	23.7
Queue Length 50th (ft)	~494	32	10	86	0
Queue Length 95th (ft)	#632	m68	m8	146	143
Internal Link Dist (ft)	513		171	89	
Turn Bay Length (ft)		75			
Base Capacity (vph)	851	921	2883	246	751
Starvation Cap Reductn	0	250	1832	0	0
Spillback Cap Reductn	0	0	0	0	106
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.07	0.63	0.66	0.40	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	263	1298	166	932	435	221
v/c Ratio	0.39	0.68	0.34	0.87	1.14	0.50
Control Delay (s/veh)	10.7	10.5	58.8	57.7	138.9	16.5
Queue Delay	1.5	3.5	0.0	4.7	0.0	0.0
Total Delay (s/veh)	12.3	13.9	58.8	62.3	138.9	16.5
Queue Length 50th (ft)	54	157	74	438	~476	36
Queue Length 95th (ft)	m53	m140	112	527	#692	119
Internal Link Dist (ft)		171		478	145	
Turn Bay Length (ft)	75		180			
Base Capacity (vph)	677	1900	483	1070	383	442
Starvation Cap Reductn	252	493	0	90	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.92	0.34	0.95	1.14	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	82	1166	62	204	958	346	111	384	252	312	484
v/c Ratio	0.63	0.94	0.10	0.92	0.64	0.41	0.81	0.62	0.60	0.98	0.94
Control Delay (s/veh)	62.2	44.1	0.3	84.8	24.1	3.8	81.4	39.3	17.3	83.4	61.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.2	44.1	0.3	84.8	24.1	3.8	81.4	39.3	17.3	83.4	61.0
Queue Length 50th (ft)	46	335	0	117	234	0	63	106	34	178	263
Queue Length 95th (ft)	#106	#474	0	#250	304	52	#155	154	110	#341	#455
Internal Link Dist (ft)		478			445			199			237
Turn Bay Length (ft)	100		100	250			70		100	150	
Base Capacity (vph)	138	1242	606	221	1494	840	138	635	425	320	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.94	0.10	0.92	0.64	0.41	0.80	0.60	0.59	0.98	0.93

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	495	1578	162	168	1008	339	203	1359	96	522	1448	399
v/c Ratio	0.95	1.21	0.27	1.31	0.99	0.66	1.33	1.13	0.16	1.32	1.11	0.60
Control Delay (s/veh)	87.8	142.0	18.7	233.7	74.8	35.5	232.2	113.2	5.9	206.6	103.3	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	87.8	142.0	18.7	233.7	74.8	35.5	232.2	113.2	5.9	206.6	103.3	22.2
Queue Length 50th (ft)	233	~922	56	~196	482	182	~239	~754	0	~315	~792	153
Queue Length 95th (ft)	#343	#1061	114	#347	#632	297	#403	#895	37	#432	#932	266
Internal Link Dist (ft)		321			262			189			329	
Turn Bay Length (ft)	200		100	200		100	150		80	200		200
Base Capacity (vph)	520	1301	596	128	1021	514	153	1199	597	396	1301	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	1.21	0.27	1.31	0.99	0.66	1.33	1.13	0.16	1.32	1.11	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	93	47	39	39	1540	52	59	1733	11
v/c Ratio	0.51	0.47	0.20	0.30	0.58	0.05	0.34	0.62	0.01
Control Delay (s/veh)	26.7	52.9	7.2	44.7	9.0	1.7	43.0	8.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.7	52.9	7.2	44.7	9.0	1.7	43.0	8.2	0.0
Queue Length 50th (ft)	17	26	0	22	216	0	32	246	0
Queue Length 95th (ft)	62	59	17	52	361	11	68	410	0
Internal Link Dist (ft)	274	331			133			182	
Turn Bay Length (ft)			50	100		60	100		60
Base Capacity (vph)	430	312	475	132	2635	1122	172	2774	1144
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.15	0.08	0.30	0.58	0.05	0.34	0.62	0.01

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	279	495	127	152	405	654	186	1340
v/c Ratio	0.78	0.77	0.88	0.37	0.92	0.42	0.61	1.04
Control Delay (s/veh)	42.9	14.9	80.5	19.9	56.4	15.1	35.4	59.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.9	14.9	80.5	19.9	56.4	15.1	35.4	59.4
Queue Length 50th (ft)	112	33	52	41	171	100	74	~335
Queue Length 95th (ft)	#220	#155	#145	88	#331	148	131	#462
Internal Link Dist (ft)	304			285		255		136
Turn Bay Length (ft)		120	80		120		120	
Base Capacity (vph)	383	666	155	442	441	1574	367	1290
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.74	0.82	0.34	0.92	0.42	0.51	1.04

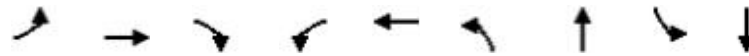
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	2259	487	77	1934	412	264	33	308
v/c Ratio	0.53	1.19	0.57	0.81	0.99	1.50	0.57	0.34	1.24
Control Delay (s/veh)	89.4	123.7	18.2	120.0	49.9	283.8	54.6	78.7	189.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	89.4	123.7	18.2	120.0	49.9	283.8	54.6	78.7	189.1
Queue Length 50th (ft)	50	~1398	213	76	~1046	~556	228	32	~373
Queue Length 95th (ft)	#101	#1525	325	#173	#1181	#771	328	70	#570
Internal Link Dist (ft)		268			243		95		97
Turn Bay Length (ft)	150		150	200		50		50	
Base Capacity (vph)	96	1897	847	95	1963	275	464	96	248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.19	0.57	0.81	0.99	1.50	0.57	0.34	1.24

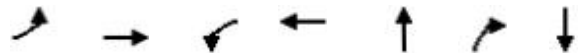
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

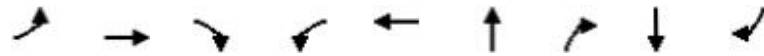
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	858	168	772	259	326	221
v/c Ratio	0.09	0.92	0.74	0.64	0.76	0.65	0.63
Control Delay (s/veh)	41.0	35.0	58.4	12.4	46.6	16.0	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.0	35.0	58.4	12.4	46.6	16.0	37.9
Queue Length 50th (ft)	6	394	92	192	136	40	108
Queue Length 95th (ft)	23	#684	#199	458	#224	127	182
Internal Link Dist (ft)		89		101	254		210
Turn Bay Length (ft)	50		50			100	
Base Capacity (vph)	127	1098	245	1295	435	570	441
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.78	0.69	0.60	0.60	0.57	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	111	982	91	79	894	200	95	98	76
v/c Ratio	0.66	0.86	0.10	0.52	0.84	0.75	0.26	0.30	0.21
Control Delay (s/veh)	59.9	27.1	4.7	48.4	19.7	51.2	11.1	31.6	8.3
Queue Delay	0.0	1.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.9	28.4	4.7	48.4	20.1	51.2	11.1	31.6	8.3
Queue Length 50th (ft)	60	470	7	46	170	107	8	47	0
Queue Length 95th (ft)	#156	#807	30	m68	#694	173	45	86	33
Internal Link Dist (ft)		496			528	307		292	
Turn Bay Length (ft)	100		100	100			50		50
Base Capacity (vph)	169	1143	898	152	1060	341	445	422	441
Starvation Cap Reductn	0	0	0	0	18	0	0	0	0
Spillback Cap Reductn	0	50	0	0	0	0	2	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.90	0.10	0.52	0.86	0.59	0.21	0.23	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	1030	56	881	62	150	133	127
v/c Ratio	0.36	0.93	0.67	0.78	0.23	0.36	0.51	0.30
Control Delay (s/veh)	51.6	20.6	79.3	20.0	31.5	26.1	38.5	23.3
Queue Delay	0.0	0.5	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.6	21.2	79.3	20.6	31.5	26.1	38.5	23.3
Queue Length 50th (ft)	19	114	32	374	29	57	66	43
Queue Length 95th (ft)	m25	m#778	#94	#577	65	111	126	92
Internal Link Dist (ft)		528		218		221		258
Turn Bay Length (ft)	60		60		60		60	
Base Capacity (vph)	84	1104	84	1132	266	418	260	418
Starvation Cap Reductn	0	8	0	10	0	0	0	0
Spillback Cap Reductn	0	0	0	57	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.94	0.67	0.82	0.23	0.36	0.51	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	498	33	858	542	693
v/c Ratio	0.84	0.06	0.85	0.66	0.36
Control Delay (s/veh)	35.8	11.3	23.9	14.1	10.5
Queue Delay	8.2	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.0	11.3	23.9	14.1	10.6
Queue Length 50th (ft)	189	6	324	126	87
Queue Length 95th (ft)	#324	22	#692	378	129
Internal Link Dist (ft)	286		487		425
Turn Bay Length (ft)		25			
Base Capacity (vph)	663	575	1012	826	1922
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	130	0	0	0	181
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.06	0.85	0.66	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	253	581	102	561	521	89	995
v/c Ratio	0.83	0.71	0.66	0.92	0.40	0.14	0.80
Control Delay (s/veh)	59.5	26.6	60.9	51.2	22.9	3.5	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.5	26.6	60.9	51.2	22.9	3.5	30.0
Queue Length 50th (ft)	139	262	57	291	117	0	252
Queue Length 95th (ft)	#258	390	#126	#488	163	23	#341
Internal Link Dist (ft)		333		200	297		410
Turn Bay Length (ft)	200		100			100	
Base Capacity (vph)	320	814	160	629	1318	626	1248
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.71	0.64	0.89	0.40	0.14	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	976	709	92	103
v/c Ratio	0.73	0.53	0.13	0.14
Control Delay (s/veh)	18.1	11.1	7.0	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.1	11.1	7.0	4.8
Queue Length 50th (ft)	136	120	10	6
Queue Length 95th (ft)	198	162	32	27
Internal Link Dist (ft)	343	702	430	214
Turn Bay Length (ft)				
Base Capacity (vph)	1335	1327	708	726
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.73	0.53	0.13	0.14
Intersection Summary				



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	259	730	188	424	83	318	817	411	468	496	269
v/c Ratio	1.00	0.86	0.86	0.54	0.21	0.82	1.01	0.81	0.99	0.50	0.47
Control Delay (s/veh)	86.8	62.3	81.0	41.2	8.0	57.9	76.0	34.0	81.3	36.9	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	86.8	62.3	81.0	41.2	8.0	57.9	76.0	34.0	81.3	36.9	12.0
Queue Length 50th (ft)	192	285	131	140	0	215	~308	145	330	155	30
Queue Length 95th (ft)	m#344	#370	#251	192	37	292	#442	#306	#544	228	114
Internal Link Dist (ft)		702		1142			410			331	
Turn Bay Length (ft)	100		25		25	100		100	200		100
Base Capacity (vph)	259	853	229	779	404	508	812	507	471	986	573
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.86	0.82	0.54	0.21	0.63	1.01	0.81	0.99	0.50	0.47

Intersection Summary

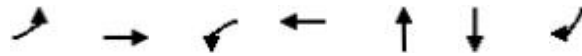
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	163	955	101	613	278	228	116
v/c Ratio	0.37	0.53	0.43	0.89	0.89	0.75	0.28
Control Delay (s/veh)	25.5	14.2	32.7	38.9	55.0	43.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.5	14.2	32.7	38.9	55.0	43.2	7.0
Queue Length 50th (ft)	60	146	41	240	104	91	0
Queue Length 95th (ft)	112	224	79	#434	#231	#185	37
Internal Link Dist (ft)		1142		281	281	272	
Turn Bay Length (ft)	150		150				
Base Capacity (vph)	442	1788	412	687	336	325	437
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.53	0.25	0.89	0.83	0.70	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	32	1200	179	601	262	223	218	70
v/c Ratio	0.44	0.90	0.92	0.67	0.85	0.54	0.70	0.18
Control Delay (s/veh)	66.4	39.9	92.9	25.2	66.4	14.5	52.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.4	39.9	92.9	25.2	66.4	14.5	52.3	1.1
Queue Length 50th (ft)	20	370	115	301	164	21	132	0
Queue Length 95th (ft)	#57	#506	#244	434	#302	92	#229	0
Internal Link Dist (ft)		253		198	124		191	
Turn Bay Length (ft)	50		100			100		100
Base Capacity (vph)	72	1327	194	900	307	410	312	379
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.90	0.92	0.67	0.85	0.54	0.70	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	535	1733	63	1525	19	157	293	233	75
v/c Ratio	0.87	0.87	0.59	1.02	0.08	0.30	0.93	0.44	0.14
Control Delay (s/veh)	52.9	25.5	72.7	53.5	23.7	24.4	68.8	29.2	2.7
Queue Delay	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.9	28.5	72.7	53.5	23.7	24.4	68.8	29.2	2.7
Queue Length 50th (ft)	153	462	39	~501	8	62	156	105	0
Queue Length 95th (ft)	#238	#647	m#76	#644	25	112	#303	172	16
Internal Link Dist (ft)		286		532		247		280	
Turn Bay Length (ft)			50		50				
Base Capacity (vph)	627	1983	106	1492	270	562	341	570	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	164	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.95	0.59	1.02	0.07	0.28	0.86	0.41	0.13

Intersection Summary

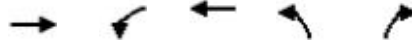
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1848	226	1416	146	433
v/c Ratio	1.02	0.94	0.58	0.36	0.67
Control Delay (s/veh)	37.9	72.5	12.4	32.7	27.9
Queue Delay	2.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.1	72.5	12.4	32.7	27.9
Queue Length 50th (ft)	~241	134	282	71	193
Queue Length 95th (ft)	#714	m#253	338	126	301
Internal Link Dist (ft)	532		799	185	
Turn Bay Length (ft)		100			100
Base Capacity (vph)	1810	240	2437	401	645
Starvation Cap Reductn	12	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	0.94	0.58	0.36	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	69	2145	22	1527	125	174
v/c Ratio	0.43	0.87	0.22	0.70	0.55	0.59
Control Delay (s/veh)	40.9	10.0	44.0	8.4	38.8	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.9	10.0	44.0	8.4	38.8	33.6
Queue Length 50th (ft)	39	228	13	131	56	66
Queue Length 95th (ft)	m44	m247	m22	150	114	134
Internal Link Dist (ft)		799		802	301	228
Turn Bay Length (ft)	100		100			
Base Capacity (vph)	180	2466	100	2196	228	294
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.87	0.22	0.70	0.55	0.59

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	39	2177	12	1437	97	205
v/c Ratio	0.35	0.86	0.12	0.60	0.39	0.83
Control Delay (s/veh)	39.2	13.6	43.3	10.6	31.1	58.5
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay (s/veh)	39.2	13.6	43.3	10.8	31.1	58.5
Queue Length 50th (ft)	23	291	7	255	39	97
Queue Length 95th (ft)	m28	#801	24	327	85	#207
Internal Link Dist (ft)		802		562	308	268
Turn Bay Length (ft)	100		150			
Base Capacity (vph)	120	2546	100	2378	276	272
Starvation Cap Reductn	0	0	0	222	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.86	0.12	0.67	0.35	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	20	920	1149	79	697	361	363	77	72	28
v/c Ratio	0.30	0.53	1.07	0.83	0.37	0.76	0.75	0.16	0.55	0.16
Control Delay (s/veh)	75.3	25.8	65.8	116.4	20.4	55.8	55.7	9.8	75.1	1.8
Queue Delay	0.0	0.5	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.3	26.3	77.7	116.4	20.4	55.8	55.7	9.8	75.1	1.8
Queue Length 50th (ft)	17	295	~832	~71	202	301	302	3	62	0
Queue Length 95th (ft)	46	360	#1098	#183	252	#476	#480	43	112	0
Internal Link Dist (ft)		562			484		648		27	
Turn Bay Length (ft)	100		100	200				100		
Base Capacity (vph)	66	1725	1073	95	1866	478	481	492	299	317
Starvation Cap Reductn	0	363	34	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.68	1.11	0.83	0.37	0.76	0.75	0.16	0.24	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	249	127	51	82	53	822	53	970
v/c Ratio	2.93	0.17	0.22	0.24	0.30	0.90	0.30	1.12
Control Delay (s/veh)	918.5	2.6	34.6	1.9	38.9	45.1	38.9	99.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	918.5	2.6	34.6	1.9	38.9	45.1	38.9	99.0
Queue Length 50th (ft)	~190	0	24	0	25	~241	25	~333
Queue Length 95th (ft)	#333	23	56	3	60	#356	60	#455
Internal Link Dist (ft)	170		242			295		421
Turn Bay Length (ft)				100	100		150	
Base Capacity (vph)	85	728	230	335	174	909	174	868
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.93	0.17	0.22	0.24	0.30	0.90	0.30	1.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



 HCM 2000 Signing Settings	 WBL	 WBR	 NBT	 NBR	 SBL	 SBT
Lanes and Sharing (#RL)						
Traffic Volume (vph)	90	70	733	70	30	606
Future Volume (vph)	90	70	733	70	30	606
Sign Control	Stop	—	Free	—	—	Free
Median Width (ft)	12	—	12	—	—	12
TWLTL Median		—		—	—	
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	6.4	6.2	—	—	4.1	—
Follow Up Time, tF (s)	3.5	3.3	—	—	2.2	—
Volume to Capacity Ratio	0.71	0.19	0.47	0.47	0.04	0.04
Control Delay (s)	83.8	17.2	0.0	0.0	0.6	1.0
Level of Service	F	C	A	A	A	A
Queue Length 95th (ft)	99	18	0	0	3	3
Approach Delay (s)	54.7	—	0.0	—	—	1.0



HCM 2000 Signing Settings	 WBL	 WBR	 NBT	 NBR	 SBL	 SBT
Lanes and Sharing (#RL)						
Traffic Volume (vph)	60	20	783	0	0	696
Future Volume (vph)	60	20	783	0	0	696
Sign Control	Stop	—	Free	—	—	Free
Median Width (ft)	12	—	0	—	—	0
TWLT Median		—		—	—	
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	6.8	6.9	—	—	—	—
Follow Up Time, tF (s)	3.5	3.3	—	—	—	—
Volume to Capacity Ratio	0.42	0.42	0.46	—	—	0.2
Control Delay (s)	37.5	37.5	0.0	—	—	0.0
Level of Service	E	E	A	—	—	A
Queue Length 95th (ft)	48	48	0	—	—	0
Approach Delay (s)	37.5	—	0.0	—	—	0.0

Appendix H

*Analysis Worksheets for Cumulative (2030) Plus
Project Conditions*

SITE LAYOUT

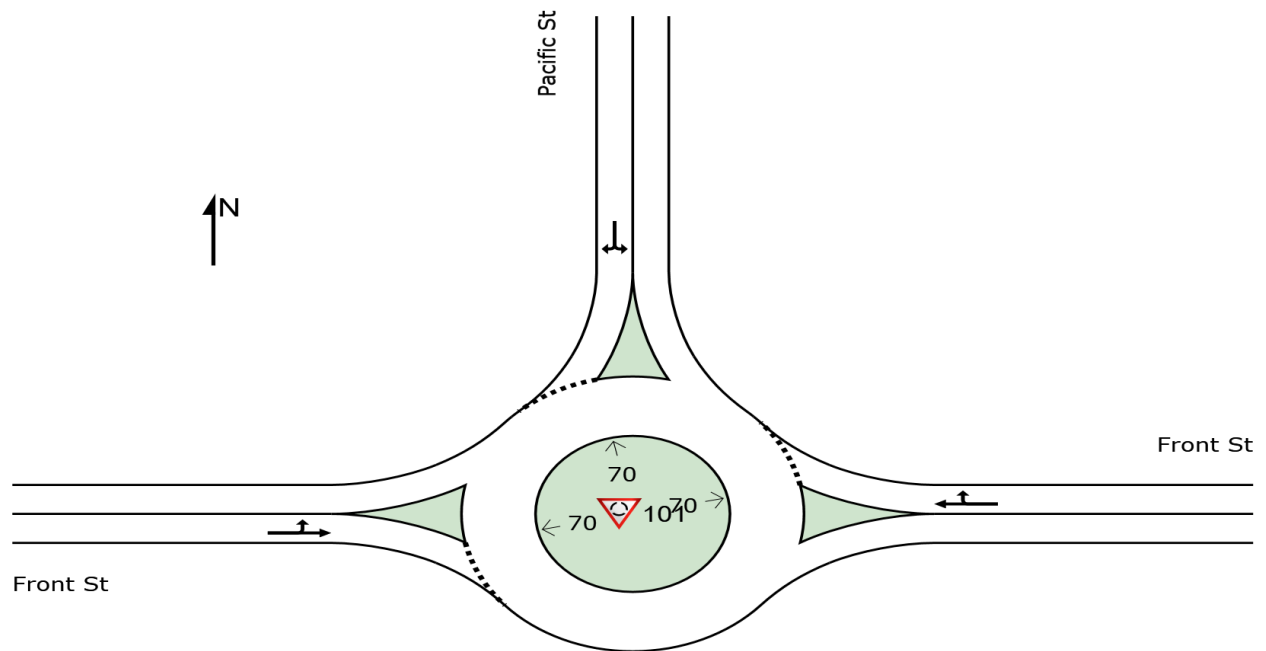
 Site: 101 [INT #1 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 **Site: 101 [INT #1 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	192	3.0	192	3.0	1197	0.160	100	4.3	LOS A	0.7	19.2	Full	1600	0.0	0.0
Approach	192	3.0	192	3.0		0.160		4.3	LOS A	0.7	19.2				
North: Pacific St															
Lane 1 ^d	79	3.0	79	3.0	1104	0.072	100	3.9	LOS A	0.3	7.7	Full	1600	0.0	0.0
Approach	79	3.0	79	3.0		0.072		3.9	LOS A	0.3	7.7				
West: Front St															
Lane 1 ^d	712	3.0	712	3.0	1294	0.551	100	7.9	LOS A	4.8	122.0	Full	1600	0.0	0.0
Approach	712	3.0	712	3.0		0.551		7.9	LOS A	4.8	122.0				
All Vehicles	983	3.0	983	3.0		0.551		6.9	LOS A	4.8	122.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From E					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	W	N								
Lane 1	181	10	192	3.0	1197	0.160	100	NA	NA	
Approach	181	10	192	3.0		0.160				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From N					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	E	W								
Lane 1	34	45	79	3.0	1104	0.072	100	NA	NA	
Approach	34	45	79	3.0		0.072				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From W					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	N	E								

Lane 1	106	606	712	3.0	1294	0.551	100	NA	NA
Approach	106	606	712	3.0		0.551			
Total %HV Deg.Satn (v/c)									
All Vehicles	983	3.0		0.551					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	20	10	200	169	7
Future Vol, veh/h	9	20	10	200	169	7
Conflicting Peds, #/hr	28	8	52	0	0	52
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	4	7	0
Mvmt Flow	9	20	10	200	169	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	473	233	228	0	-	0
Stage 1	225	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	553	811	1352	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	771	1293	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.7	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1293	-	661	-	-	
HCM Lane V/C Ratio	0.008	-	0.044	-	-	
HCM Control Delay (s)	7.8	0	10.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1266	26	0	961	94	0	0	14	0	0	116
Future Vol, veh/h	68	1266	26	0	961	94	0	0	14	0	0	116
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	68	1266	26	0	961	94	0	0	14	0	0	116
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1076	0	0	-	-	0	-	-	1323	-	-	1032
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.2	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	637	-	-	0	-	-	0	0	193	0	0	285
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	626	-	-	-	-	-	-	-	186	-	-	279
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0			25.9			26.8		
HCM LOS							D			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1					
Capacity (veh/h)	186	626	-	-	-	-	279					
HCM Lane V/C Ratio	0.075	0.109	-	-	-	-	0.416					
HCM Control Delay (s)	25.9	11.4	-	-	-	-	26.8					
HCM Lane LOS	D	B	-	-	-	-	D					
HCM 95th %tile Q(veh)	0.2	0.4	-	-	-	-	1.9					

CUPP_PM
5: Pacific Ave & Laurel St

CUPP_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	1120	73	83	1031	91	81	96	60	97	59	63
Future Volume (veh/h)	162	1120	73	83	1031	91	81	96	60	97	59	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	0.84		0.67	0.90		0.67
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	162	1120	73	83	1031	91	81	96	60	97	59	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	178	1076	70	113	1106	854	187	178	111	174	123	131
Arrive On Green	0.10	0.62	0.62	0.06	0.59	0.59	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1810	1729	113	1810	1885	1456	1079	870	544	1075	600	641
Grp Volume(v), veh/h	162	0	1193	83	1031	91	81	0	156	97	0	122
Grp Sat Flow(s),veh/h/ln	1810	0	1842	1810	1885	1456	1079	0	1415	1075	0	1241
Q Serve(g_s), s	10.6	0.0	74.7	5.4	59.9	3.3	8.6	0.0	11.8	10.6	0.0	10.4
Cycle Q Clear(g_c), s	10.6	0.0	74.7	5.4	59.9	3.3	19.0	0.0	11.8	22.5	0.0	10.4
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.38	1.00		0.52
Lane Grp Cap(c), veh/h	178	0	1147	113	1106	854	187	0	289	174	0	254
V/C Ratio(X)	0.91	0.00	1.04	0.73	0.93	0.11	0.43	0.00	0.54	0.56	0.00	0.48
Avail Cap(c_a), veh/h	178	0	1147	124	1106	854	191	0	295	178	0	259
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.35	0.35	0.35	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	0.0	22.6	55.3	22.6	10.9	50.5	0.0	42.7	52.7	0.0	42.1
Incr Delay (d2), s/veh	42.0	0.0	37.7	5.8	6.5	0.1	1.6	0.0	1.9	3.7	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	41.4	2.7	26.8	1.1	2.4	0.0	4.3	3.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	95.6	0.0	60.4	61.1	29.1	11.0	52.1	0.0	44.6	56.4	0.0	43.5
LnGrp LOS	F		F	E	C	B	D		D	E		D
Approach Vol, veh/h		1355			1205			237			219	
Approach Delay, s/veh		64.6			29.9			47.1			49.2	
Approach LOS		E			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	75.0		28.5	11.7	79.3		28.5				
Change Period (Y+Rc), s	4.2	4.6		4.0	4.2	4.6		4.0				
Max Green Setting (Gmax), s	11.8	70.4		25.0	8.2	74.0		25.0				
Max Q Clear Time (g_c+I1), s	12.6	61.9		24.5	7.4	76.7		21.0				
Green Ext Time (p_c), s	0.0	5.2		0.1	0.0	0.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			48.2									
HCM 6th LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1022	56	317	864	195	26	258	330	202	410	275
Future Volume (veh/h)	175	1022	56	317	864	195	26	258	330	202	410	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	175	1022	56	317	864	195	26	258	330	202	410	275
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	164	1230	67	291	805	682	66	415	352	226	583	494
Arrive On Green	0.09	0.35	0.35	0.16	0.42	0.42	0.04	0.22	0.22	0.12	0.31	0.31
Sat Flow, veh/h	1810	3480	191	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	175	530	548	317	864	195	26	258	330	202	410	275
Grp Sat Flow(s),veh/h/ln	1810	1805	1866	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	12.7	37.6	37.6	22.5	59.3	11.1	2.0	17.2	28.2	15.4	26.7	20.0
Cycle Q Clear(g_c), s	12.7	37.6	37.6	22.5	59.3	11.1	2.0	17.2	28.2	15.4	26.7	20.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	638	660	291	805	682	66	415	352	226	583	494
V/C Ratio(X)	1.07	0.83	0.83	1.09	1.07	0.29	0.40	0.62	0.94	0.89	0.70	0.56
Avail Cap(c_a), veh/h	164	638	660	291	805	682	103	428	362	257	589	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	41.4	41.4	58.8	40.3	26.5	66.0	49.5	53.8	60.4	42.9	40.5
Incr Delay (d2), s/veh	41.2	1.2	1.2	73.0	50.0	0.8	1.4	2.6	31.2	26.4	3.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	16.9	17.5	16.2	38.4	4.5	0.9	8.5	14.5	8.7	13.2	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.9	42.6	42.6	131.7	90.3	27.3	67.4	52.1	85.0	86.7	46.6	41.9
LnGrp LOS	F	D	D	F	F	C	E	D	F	F	D	D
Approach Vol, veh/h	1253					1376		614		887		
Approach Delay, s/veh	51.3					90.9		70.4		54.3		
Approach LOS	D					F		E		D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	63.9	8.8	47.6	26.2	54.1	21.2	35.2					
Change Period (Y+Rc), s	3.7	4.6	3.7	4.6	3.7	4.6	3.7	4.6				
Max Green Setting (Gmax), s	59.3	8.0	43.4	22.5	49.5	19.9	31.5					
Max Q Clear Time (g_c+I14), s	61.3	4.0	28.7	24.5	39.6	17.4	30.2					
Green Ext Time (p_c), s	0.0	0.0	3.1	0.0	4.9	0.1	0.4					

Intersection Summary

HCM 6th Ctrl Delay	68.0
HCM 6th LOS	E

Intersection

Intersection Delay, s/veh 8.3

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	164	1	13	147	0	9	0	11	25	26	34
Future Vol, veh/h	0	164	1	13	147	0	9	0	11	25	26	34
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	0	164	1	13	147	0	9	0	11	25	26	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.4	8.4	7.8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	45%	0%	8%	49%	0%
Vol Thru, %	0%	99%	92%	51%	0%
Vol Right, %	55%	1%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	165	160	51	34
LT Vol	9	0	13	25	0
Through Vol	0	164	147	26	0
RT Vol	11	1	0	0	34
Lane Flow Rate	20	165	160	51	34
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.026	0.199	0.193	0.078	0.043
Departure Headway (Hd)	4.601	4.345	4.353	5.492	4.541
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	778	828	826	654	789
Service Time	2.627	2.363	2.372	3.214	2.262
HCM Lane V/C Ratio	0.026	0.199	0.194	0.078	0.043
HCM Control Delay	7.8	8.4	8.4	8.7	7.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.7	0.7	0.3	0.1

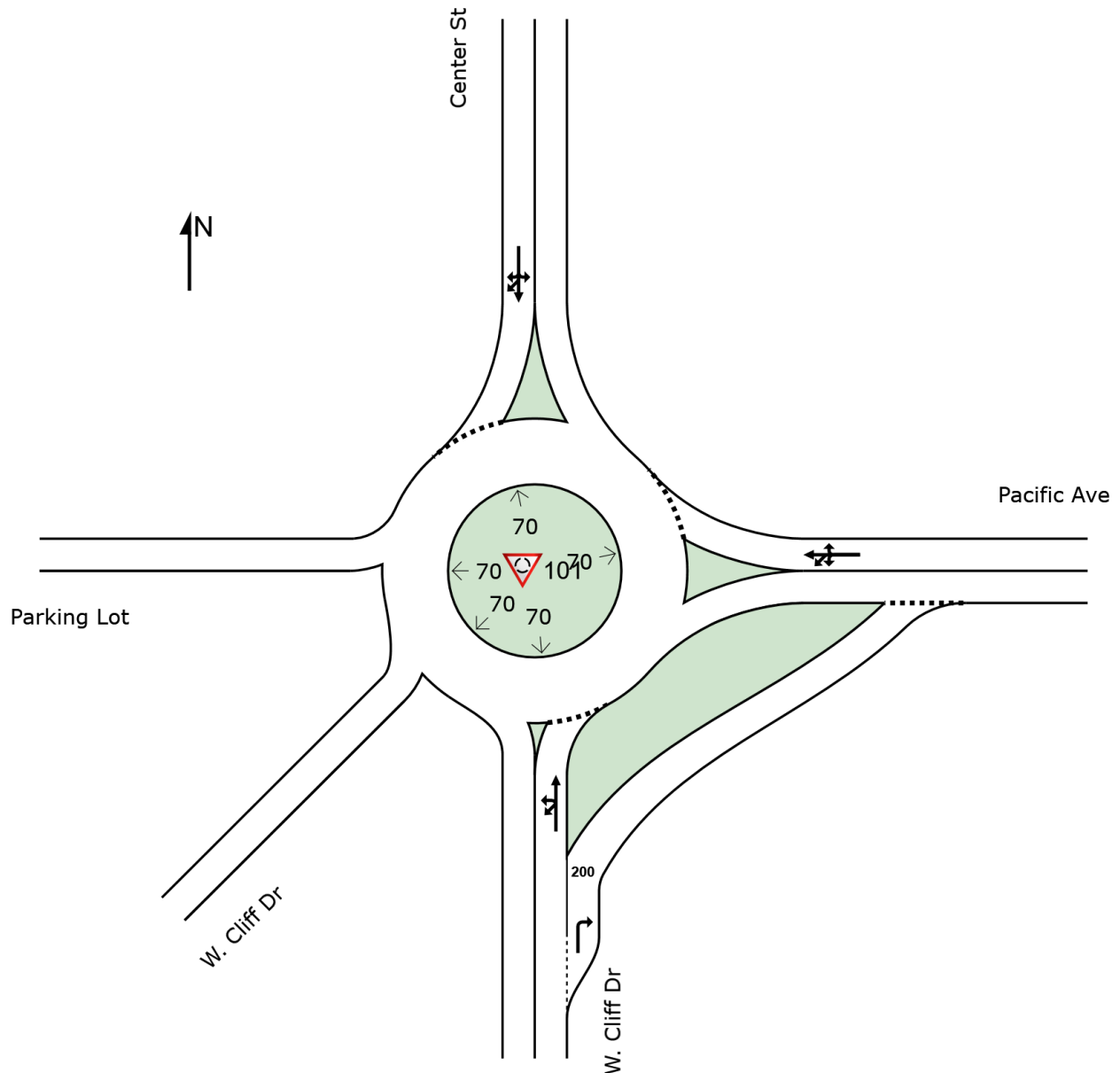
Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	56	577	32	127	551
Future Vol, veh/h	15	56	577	32	127	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	56	577	32	127	551
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1398	593	0	0	609	0
Stage 1	593	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	155	506	-	-	970	-
Stage 1	552	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	126	506	-	-	970	-
Mov Cap-2 Maneuver	126	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	20.1	0		1.7		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	309	970	-
HCM Lane V/C Ratio		-	-	0.23	0.131	-
HCM Control Delay (s)		-	-	20.1	9.3	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	0.9	0.5	-

SITE LAYOUT

 Site: 101 [INT #9 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 Site: 101 [INT #9 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance																
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.	
	[Total veh/h	HV] %	[Total veh/h	HV] %		veh/h	v/c			%	sec					[Veh
South: W. Cliff Dr																
Lane 1 ^d	199	3.0	199	3.0	1332	0.149	100	3.8	LOS A	0.7	16.6	Full	1600	0.0	0.0	
Lane 2	581	3.0	581	3.0	1292	0.450	100	6.7	LOS A	3.2	82.4		Short	200	0.0	NA
Approach	780	3.0	780	3.0		0.450		6.0	LOS A	3.2	82.4					
East: Pacific Ave																
Lane 1 ^d	713	3.0	713	3.0	1083	0.658	100	12.4	LOS B	8.0	204.3	Full	1600	0.0	0.0	
Approach	713	3.0	713	3.0		0.658		12.4	LOS B	8.0	204.3					
North: Center St																
Lane 1 ^d	438	3.0	438	3.0	647	0.677	100	19.5	LOS C	5.6	144.4	Full	1600	0.0	0.0	
Approach	438	3.0	438	3.0		0.677		19.5	LOS C	5.6	144.4					
All Vehicles	1931	3.0	1931	3.0		0.677		11.4	LOS B	8.0	204.3					

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)											
South: W. Cliff Dr											
Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	5	175	-	199	3.0	1332	0.149	100	NA	NA
Lane 2	-	-	-	581	581	3.0	1292	0.450	100	0.0	1
Approach	19	5	175	581	780	3.0	0.450				
East: Pacific Ave											
Mov. From E To Exit:	L2 S	L1 SW	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	462	182	5	63	713	3.0	1083	0.658	100	NA	NA
Approach	462	182	5	63	713	3.0	0.658				
North: Center St											

Mov. From N To Exit:	L2	T1	R1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	172	225	5	438	3.0	647	0.677	100	NA	NA
Approach	36	172	225	5	438	3.0		0.677			
Total %HV Deg.Satn (v/c)											
All Vehicles	1931	3.0		0.677							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h		Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	↗
Traffic Volume (vph)	843	64	430	691	98	626
Future Volume (vph)	843	64	430	691	98	626
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3514		1805	3574	1787	1570
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3514		1805	3574	1787	1570
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	843	64	430	691	98	626
RTOR Reduction (vph)	4	0	0	0	0	540
Lane Group Flow (vph)	903	0	430	691	98	86
Confl. Peds. (#/hr)		16	16			3
Confl. Bikes (#/hr)		15				
Heavy Vehicles (%)	1%	0%	0%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1 3 9	1 2 3 9	4	
Permitted Phases						4
Actuated Green, G (s)	35.0		74.0	117.0	20.0	20.0
Effective Green, g (s)	35.0		74.0	117.0	20.0	20.0
Actuated g/C Ratio	0.24		0.51	0.81	0.14	0.14
Clearance Time (s)	4.0				4.0	4.0
Vehicle Extension (s)	3.0				3.0	3.0
Lane Grp Cap (vph)	848		921	2883	246	216
v/s Ratio Prot	c0.26		c0.24	0.19	0.05	
v/s Ratio Perm						c0.06
v/c Ratio	1.07		0.47	0.24	0.40	0.40
Uniform Delay, d1	55.0		22.8	3.4	57.0	57.0
Progression Factor	1.00		0.33	0.15	1.00	1.00
Incremental Delay, d2	49.7		0.1	0.0	1.1	1.2
Delay (s)	104.7		7.6	0.5	58.1	58.2
Level of Service	F		A	A	E	E
Approach Delay (s)	104.7			3.2	58.2	
Approach LOS	F			A	E	
Intersection Summary						
HCM 2000 Control Delay			51.2		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			145.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			71.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

CUPP_PM
11: Front St/Pacific Ave & Mission St/Water St

CUPP_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	1137	165	166	893	39	0	0	0	75	371	222
Future Volume (vph)	264	1137	165	166	893	39	0	0	0	75	371	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95						1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00						1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.98		1.00	0.99						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1787	3474		3502	3521						1853	1470
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1787	3474		3502	3521						1853	1470
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	264	1137	165	166	893	39	0	0	0	75	371	222
RTOR Reduction (vph)	0	8	0	0	2	0	0	0	0	0	0	136
Lane Group Flow (vph)	264	1294	0	166	930	0	0	0	0	0	446	86
Confl. Peds. (#/hr)	14		26	26		14	43		43	43		43
Confl. Bikes (#/hr)			15			19			1			8
Heavy Vehicles (%)	1%	1%	1%	0%	1%	13%	0%	0%	0%	0%	2%	1%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	4 5	4 5 6		9	6 9					3	3	
Permitted Phases												3
Actuated Green, G (s)	55.0	79.0		20.0	44.0						30.0	30.0
Effective Green, g (s)	55.0	79.0		20.0	44.0						30.0	30.0
Actuated g/C Ratio	0.38	0.54		0.14	0.30						0.21	0.21
Clearance Time (s)				4.0							4.0	4.0
Vehicle Extension (s)				3.0							2.0	2.0
Lane Grp Cap (vph)	677	1892		483	1068						383	304
v/s Ratio Prot	0.15	c0.37		0.05	c0.26						c0.24	
v/s Ratio Perm												0.06
v/c Ratio	0.39	0.68		0.34	0.87						1.16	0.28
Uniform Delay, d1	32.8	23.9		56.6	47.8						57.5	48.5
Progression Factor	0.59	0.69		1.00	1.00						1.00	1.00
Incremental Delay, d2	0.2	0.4		0.4	7.9						98.9	0.2
Delay (s)	19.5	17.0		57.0	55.7						156.4	48.6
Level of Service	B	B		E	E						F	D
Approach Delay (s)		17.4			55.9			0.0			120.6	
Approach LOS		B			E			A			F	
Intersection Summary												
HCM 2000 Control Delay			50.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			145.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			82.3%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1170	62	233	964	346	111	392	272	312	426	58
Future Volume (veh/h)	82	1170	62	233	964	346	111	392	272	312	426	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	82	1170	62	233	964	346	111	392	0	312	426	58
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	105	1234	528	219	1461	614	140	637		322	453	62
Arrive On Green	0.06	0.34	0.34	0.12	0.41	0.41	0.08	0.18	0.00	0.18	0.28	0.28
Sat Flow, veh/h	1795	3582	1533	1795	3582	1506	1795	3582	1598	1810	1630	222
Grp Volume(v), veh/h	82	1170	62	233	964	346	111	392	0	312	0	484
Grp Sat Flow(s),veh/h/ln	1795	1791	1533	1795	1791	1506	1795	1791	1598	1810	0	1852
Q Serve(g_s), s	4.1	28.6	2.5	11.0	19.6	15.9	5.5	9.1	0.0	15.4	0.0	23.0
Cycle Q Clear(g_c), s	4.1	28.6	2.5	11.0	19.6	15.9	5.5	9.1	0.0	15.4	0.0	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	105	1234	528	219	1461	614	140	637		322	0	514
V/C Ratio(X)	0.78	0.95	0.12	1.06	0.66	0.56	0.79	0.62		0.97	0.00	0.94
Avail Cap(c_a), veh/h	140	1234	528	219	1461	614	140	637		322	0	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.8	28.7	20.2	39.5	21.6	20.5	40.8	34.2	0.0	36.8	0.0	31.8
Incr Delay (d2), s/veh	8.9	11.9	0.3	78.0	2.4	3.7	24.6	1.8	0.0	41.7	0.0	25.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	13.7	0.9	9.5	8.3	6.0	3.3	4.1	0.0	10.4	0.0	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	40.6	20.5	117.5	23.9	24.2	65.4	35.9	0.0	78.5	0.0	57.5
LnGrp LOS	D	D	C	F	C	C	E	D		E	A	E
Approach Vol, veh/h	1314			1543			503			796		
Approach Delay, s/veh	40.3			38.1			42.4			65.7		
Approach LOS	D			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	35.0	20.0	20.0	9.3	40.7	11.0	29.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	1.0	31.0	16.0	16.0	7.0	35.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	1.0	30.6	17.4	11.1	6.1	21.6	7.5	25.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.1	0.0	6.8	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 44.6
HCM 6th LOS D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↗	↑↑	↗	↗	↑↑	↗	↔↔	↑↑	↗
Traffic Volume (veh/h)	518	1579	162	168	1011	339	203	1384	103	522	1473	431
Future Volume (veh/h)	518	1579	162	168	1011	339	203	1384	103	522	1473	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No					No		No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1885	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	518	1579	0	168	1011	0	203	1384	103	522	1473	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	0	1	1	1
Cap, veh/h	522	1305		129	1023		154	1202	520	398	1305	
Arrive On Green	0.15	0.36	0.00	0.07	0.29	0.00	0.09	0.34	0.34	0.11	0.36	0.00
Sat Flow, veh/h	3483	3582	1610	1810	3582	1598	1795	3582	1548	3483	3582	1598
Grp Volume(v), veh/h	518	1579	0	168	1011	0	203	1384	103	522	1473	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1610	1810	1791	1598	1795	1791	1548	1742	1791	1598
Q Serve(g_s), s	20.8	51.0	0.0	10.0	39.3	0.0	12.0	47.0	6.6	16.0	51.0	0.0
Cycle Q Clear(g_c), s	20.8	51.0	0.0	10.0	39.3	0.0	12.0	47.0	6.6	16.0	51.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	522	1305		129	1023		154	1202	520	398	1305	
V/C Ratio(X)	0.99	1.21		1.30	0.99		1.32	1.15	0.20	1.31	1.13	
Avail Cap(c_a), veh/h	522	1305		129	1023		154	1202	520	398	1305	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	59.4	44.5	0.0	65.0	49.8	0.0	64.0	46.5	33.1	62.0	44.5	0.0
Incr Delay (d2), s/veh	37.1	101.9	0.0	180.1	25.1	0.0	181.8	77.9	0.9	157.1	68.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	40.9	0.0	11.1	21.1	0.0	13.3	33.8	2.7	15.8	34.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.5	146.4	0.0	245.1	74.9	0.0	245.8	124.4	33.9	219.1	112.8	0.0
LnGrp LOS	F	F		F	E		F	F	C	F	F	
Approach Vol, veh/h	2097		1179			1690			1995			
Approach Delay, s/veh	134.1		99.1			133.5			140.6			
Approach LOS	F		F			F			F			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.0	55.0	16.0	55.0	25.0	44.0	20.0	51.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	51.0	12.0	51.0	21.0	40.0	16.0	47.0				
Max Q Clear Time (g_c+I12, s)	4.0	53.0	14.0	53.0	22.8	41.3	18.0	49.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	129.9
HCM 6th LOS	F

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↕		↕		↕	↕	↕	
Traffic Volume (veh/h)	40	0	54	53	0	39	40	1578	56	59	1778	11
Future Volume (veh/h)	40	0	54	53	0	39	40	1578	56	59	1778	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	40	0	54	53	0	39	40	1578	56	59	1778	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	120	21	113	266	0	213	64	1871	805	141	2023	870
Arrive On Green	0.14	0.00	0.14	0.14	0.00	0.14	0.04	0.52	0.52	0.08	0.56	0.56
Sat Flow, veh/h	465	152	832	1367	0	1564	1810	3582	1541	1810	3582	1540
Grp Volume(v), veh/h	94	0	0	53	0	39	40	1578	56	59	1778	11
Grp Sat Flow(s),veh/h/ln	1449	0	0	1367	0	1564	1810	1791	1541	1810	1791	1540
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	2.0	2.0	33.9	1.6	2.8	38.6	0.3
Cycle Q Clear(g_c), s	5.4	0.0	0.0	3.1	0.0	2.0	2.0	33.9	1.6	2.8	38.6	0.3
Prop In Lane	0.43		0.57	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	0	0	266	0	213	64	1871	805	141	2023	870
V/C Ratio(X)	0.37	0.00	0.00	0.20	0.00	0.18	0.63	0.84	0.07	0.42	0.88	0.01
Avail Cap(c_a), veh/h	444	0	0	441	0	417	101	1871	805	141	2023	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	34.9	0.0	34.4	42.8	18.4	10.7	39.6	16.9	8.6
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	3.8	4.9	0.2	2.0	5.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.0	0.0	0.8	0.9	14.0	0.6	1.3	15.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	0.0	0.0	35.0	0.0	34.6	46.6	23.2	10.8	41.5	22.7	8.6
LnGrp LOS	D	A	A	D	A	C	D	C	B	D	C	A
Approach Vol, veh/h	94		92			1674			1848			
Approach Delay, s/veh	36.2		34.9			23.4			23.3			
Approach LOS	D		C			C			C			
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	16.2		7.2	54.8		16.2	11.0	51.0				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	24.0		5.0	49.0		24.0	7.0	47.0				
Max Q Clear Time (g_c+I1), s	7.4		4.0	40.6		5.1	4.8	35.9				
Green Ext Time (p_c), s	0.3		0.0	6.8		0.2	0.0	8.1				
Intersection Summary												
HCM 6th Ctrl Delay			23.9									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱	↰	↱		↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	71	208	495	127	97	55	405	692	0	186	1146	239
Future Volume (veh/h)	71	208	495	127	97	55	405	692	0	186	1146	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1885	1885
Adj Flow Rate, veh/h	71	208	0	127	97	55	405	692	0	186	1146	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	0	1	1	1	0	1	1
Cap, veh/h	128	266		284	246	140	446	1703		232	1274	
Arrive On Green	0.22	0.22	0.00	0.22	0.22	0.22	0.25	0.48	0.00	0.13	0.36	0.00
Sat Flow, veh/h	281	1205	1598	1176	1117	634	1795	3582	1598	1810	3676	0
Grp Volume(v), veh/h	279	0	0	127	0	152	405	692	0	186	1146	0
Grp Sat Flow(s), veh/h/ln	1486	0	1598	1176	0	1751	1795	1791	1598	1810	1791	0
Q Serve(g_s), s	7.6	0.0	0.0	0.0	0.0	5.1	15.0	8.6	0.0	6.8	20.7	0.0
Cycle Q Clear(g_c), s	12.7	0.0	0.0	11.0	0.0	5.1	15.0	8.6	0.0	6.8	20.7	0.0
Prop In Lane	0.25		1.00	1.00		0.36	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	394	0		284	0	386	446	1703		232	1274	
V/C Ratio(X)	0.71	0.00		0.45	0.00	0.39	0.91	0.41		0.80	0.90	
Avail Cap(c_a), veh/h	416	0		300	0	410	447	1703		371	1310	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	25.1	0.0	22.7	24.9	11.7	0.0	28.9	20.9	0.0
Incr Delay (d2), s/veh	5.2	0.0	0.0	1.1	0.0	0.7	22.3	0.2	0.0	6.3	8.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	1.9	0.0	2.1	8.7	3.1	0.0	3.2	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	0.0	26.2	0.0	23.4	47.2	11.8	0.0	35.3	29.4	0.0
LnGrp LOS	C	A		C	A	C	D	B		D	C	
Approach Vol, veh/h	279			279			1097			1332		
Approach Delay, s/veh	31.1			24.6			24.9			30.2		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	2.8	36.5		19.1	21.0	28.3		19.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	1.0	28.0		16.0	17.0	25.0		16.0				
Max Q Clear Time (g_c+1.0), s	10.6	10.6		14.7	17.0	22.7		13.0				
Green Ext Time (p_c), s	0.2	4.5		0.2	0.0	1.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	2304	487	90	1922	48	412	223	56	33	285	23
Future Volume (veh/h)	51	2304	487	90	1922	48	412	223	56	33	285	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1856	1885	1870	1900	1841	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	51	2304	487	90	1922	48	412	223	56	33	285	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	3	3	1	2	0	4	1	0	0	0	0
Cap, veh/h	85	2548	1127	96	2583	64	278	362	91	72	228	18
Arrive On Green	0.05	0.72	0.72	0.05	0.73	0.73	0.16	0.25	0.25	0.04	0.13	0.13
Sat Flow, veh/h	1810	3526	1559	1795	3542	88	1753	1444	363	1810	1726	139
Grp Volume(v), veh/h	51	2304	487	90	960	1010	412	0	279	33	0	308
Grp Sat Flow(s),veh/h/ln	1810	1763	1559	1795	1777	1854	1753	0	1807	1810	0	1865
Q Serve(g_s), s	4.1	78.5	18.9	7.5	47.7	48.7	23.8	0.0	20.5	2.7	0.0	19.8
Cycle Q Clear(g_c), s	4.1	78.5	18.9	7.5	47.7	48.7	23.8	0.0	20.5	2.7	0.0	19.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.20	1.00		0.07
Lane Grp Cap(c), veh/h	85	2548	1127	96	1295	1351	278	0	453	72	0	246
V/C Ratio(X)	0.60	0.90	0.43	0.94	0.74	0.75	1.48	0.00	0.62	0.46	0.00	1.25
Avail Cap(c_a), veh/h	97	2548	1127	96	1295	1351	278	0	453	97	0	246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.1	16.6	8.4	70.8	12.0	12.1	63.1	0.0	49.8	70.4	0.0	65.1
Incr Delay (d2), s/veh	6.4	5.9	1.2	72.4	3.8	3.8	234.9	0.0	2.9	3.3	0.0	142.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	31.0	6.5	5.4	18.9	20.1	28.8	0.0	9.7	1.3	0.0	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.5	22.5	9.6	143.2	15.8	15.9	298.0	0.0	52.7	73.8	0.0	207.1
LnGrp LOS	E	C	A	F	B	B	F		D	E		F
Approach Vol, veh/h		2842			2060			691			341	
Approach Delay, s/veh		21.3			21.4			199.0			194.2	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	113.4	28.0	24.4	11.2	114.3	10.2	42.2				
Change Period (Y+Rc), s	4.2	4.6	4.2	* 4.6	4.2	4.6	4.2	4.6				
Max Green Setting (Gmax), s	8.0	81.2	23.8	* 20	8.0	81.2	8.0	35.2				
Max Q Clear Time (g_c+l1), s	9.5	80.5	25.8	21.8	6.1	50.7	4.7	22.5				
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.0	25.3	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			52.0									
HCM 6th LOS			D									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	888	30	176	801	20	35	224	335	23	169	29
Future Volume (veh/h)	11	888	30	176	801	20	35	224	335	23	169	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.93	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1870	1900	1900	1856	1900	1900	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	11	888	30	176	801	20	35	224	335	23	169	29
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	2	0	0	3	0	0	1	0	0	2	0
Cap, veh/h	27	919	31	210	1102	28	81	379	342	62	289	46
Arrive On Green	0.02	0.51	0.51	0.12	0.61	0.61	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1682	1796	61	1810	1801	45	155	1655	1497	76	1265	203
Grp Volume(v), veh/h	11	0	918	176	0	821	259	0	335	221	0	0
Grp Sat Flow(s), veh/h/ln	1682	0	1857	1810	0	1846	1810	0	1497	1543	0	0
Q Serve(g_s), s	0.6	0.0	42.6	8.5	0.0	27.7	0.0	0.0	19.8	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	42.6	8.5	0.0	27.7	11.1	0.0	19.8	11.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	0.14		1.00	0.10		0.13
Lane Grp Cap(c), veh/h	27	0	950	210	0	1129	460	0	342	398	0	0
V/C Ratio(X)	0.41	0.00	0.97	0.84	0.00	0.73	0.56	0.00	0.98	0.56	0.00	0.00
Avail Cap(c_a), veh/h	113	0	962	215	0	1129	460	0	342	408	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.5	0.0	21.0	38.6	0.0	12.1	30.8	0.0	34.2	30.3	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.0	21.2	22.4	0.0	2.4	1.6	0.0	42.7	1.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	22.3	5.0	0.0	10.7	5.1	0.0	11.1	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	0.0	42.2	61.0	0.0	14.5	32.4	0.0	76.9	31.9	0.0	0.0
LnGrp LOS	D	A	D	E	A	B	C	A	E	C	A	A
Approach Vol, veh/h	929			997			594			221		
Approach Delay, s/veh	42.3			22.7			57.5			31.9		
Approach LOS	D			C			E			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	49.6		25.0	5.6	58.6		25.0				
Change Period (Y+Rc), s	4.2	4.0		* 4.6	* 4.2	4.0		4.6				
Max Green Setting (Gmax), s	46.2			* 21	* 6	50.8		20.4				
Max Q Clear Time (g_c+I10), s	44.6			13.9	2.6	29.7		21.8				
Green Ext Time (p_c), s	0.0	1.0		0.7	0.0	6.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	1051	91	79	923	28	141	59	95	32	72	76
Future Volume (veh/h)	111	1051	91	79	923	28	141	59	95	32	72	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.98		0.93	0.98		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1900	1870	1900	1900	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	111	1051	91	79	923	28	141	59	95	32	72	76
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	1	0	0	2	0	0	0	0	0	2	0
Cap, veh/h	139	1005	802	121	941	29	68	13	385	52	92	383
Arrive On Green	0.08	0.53	0.53	0.13	1.00	1.00	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	1885	1504	1810	1801	55	0	50	1505	0	361	1500
Grp Volume(v), veh/h	111	1051	91	79	0	951	200	0	95	104	0	76
Grp Sat Flow(s), veh/h/ln	1781	1885	1504	1810	0	1856	50	0	1505	361	0	1500
Q Serve(g_s), s	5.5	48.0	2.7	3.7	0.0	0.0	0.0	0.0	4.5	0.0	0.0	3.6
Cycle Q Clear(g_c), s	5.5	48.0	2.7	3.7	0.0	0.0	23.0	0.0	4.5	23.0	0.0	3.6
Prop In Lane	1.00		1.00	1.00		0.03	0.70		1.00	0.31		1.00
Lane Grp Cap(c), veh/h	139	1005	802	121	0	970	81	0	385	144	0	383
V/C Ratio(X)	0.80	1.05	0.11	0.65	0.00	0.98	2.47	0.00	0.25	0.72	0.00	0.20
Avail Cap(c_a), veh/h	139	1005	802	141	0	990	81	0	385	144	0	383
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.00	0.52	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	21.0	10.4	38.0	0.0	0.0	41.4	0.0	26.6	28.3	0.0	26.3
Incr Delay (d2), s/veh	25.8	41.0	0.1	2.7	0.0	16.7	695.8	0.0	0.3	15.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	30.3	0.9	1.7	0.0	4.5	17.5	0.0	1.6	2.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.6	62.0	10.5	40.7	0.0	16.7	737.2	0.0	27.0	44.3	0.0	26.5
LnGrp LOS	E	F	B	D	A	B	F	A	C	D	A	C
Approach Vol, veh/h	1253			1030			295			180		
Approach Delay, s/veh	58.6			18.6			508.5			36.8		
Approach LOS	E			B			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.0	52.0		27.0	11.0	51.0		27.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	48.0	48.0		23.0	7.0	48.0		23.0				
Max Q Clear Time (g_c+15), s	50.0	50.0		25.0	7.5	2.0		25.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	10.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	90.4
HCM 6th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1030	75	66	872	62	70	99	62	133	84	50
Future Volume (veh/h)	30	1030	75	66	872	62	70	99	62	133	84	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.97		0.93	0.97		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1870	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	30	1030	75	66	872	62	70	99	62	133	84	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	2	0	2	0	0	0	0	0	0	0
Cap, veh/h	42	997	73	84	1032	73	279	240	151	257	244	145
Arrive On Green	0.02	0.58	0.58	0.05	0.60	0.60	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	1726	126	1810	1718	122	1234	1060	664	1207	1077	641
Grp Volume(v), veh/h	30	0	1105	66	0	934	70	0	161	133	0	134
Grp Sat Flow(s), veh/h/ln	1810	0	1852	1810	0	1840	1234	0	1724	1207	0	1718
Q Serve(g_s), s	1.5	0.0	52.0	3.2	0.0	37.0	4.5	0.0	7.2	9.5	0.0	5.9
Cycle Q Clear(g_c), s	1.5	0.0	52.0	3.2	0.0	37.0	10.4	0.0	7.2	16.7	0.0	5.9
Prop In Lane	1.00		0.07	1.00		0.07	1.00		0.39	1.00		0.37
Lane Grp Cap(c), veh/h	42	0	1070	84	0	1106	279	0	391	257	0	389
V/C Ratio(X)	0.71	0.00	1.03	0.78	0.00	0.84	0.25	0.00	0.41	0.52	0.00	0.34
Avail Cap(c_a), veh/h	84	0	1070	84	0	1106	279	0	391	257	0	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.00	0.38	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	0.0	19.0	42.4	0.0	14.6	33.6	0.0	29.7	36.8	0.0	29.2
Incr Delay (d2), s/veh	3.1	0.0	26.1	33.9	0.0	8.0	2.1	0.0	3.2	7.2	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	27.2	2.2	0.0	15.9	1.5	0.0	3.3	3.3	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	0.0	45.1	76.4	0.0	22.5	35.7	0.0	32.9	44.0	0.0	31.6
LnGrp LOS	D	A	F	E	A	C	D	A	C	D	A	C
Approach Vol, veh/h	1135			1000			231			267		
Approach Delay, s/veh	45.1			26.1			33.7			37.8		
Approach LOS	D			C			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	56.6		25.3	6.3	58.7		25.3				
Change Period (Y+Rc), s	4.2	4.6		4.9	* 4.2	4.6		* 4.9				
Max Green Setting (Gmax), s	4.2	52.0		20.1	* 4.2	52.0		* 20				
Max Q Clear Time (g_c+15), s	4.2	54.0		12.4	3.5	39.0		18.7				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	7.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (veh/h)	519	33	945	557	0	797
Future Volume (veh/h)	519	33	945	557	0	797
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1870	0	1885
Adj Flow Rate, veh/h	519	0	945	0	0	797
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	0	1	2	0	1
Cap, veh/h	570		937		0	1781
Arrive On Green	0.32	0.00	0.99	0.00	0.00	0.50
Sat Flow, veh/h	1795	1610	1885	1585	0	3770
Grp Volume(v), veh/h	519	0	945	0	0	797
Grp Sat Flow(s),veh/h/ln	1795	1610	1885	1585	0	1791
Q Serve(g_s), s	19.4	0.0	34.8	0.0	0.0	10.1
Cycle Q Clear(g_c), s	19.4	0.0	34.8	0.0	0.0	10.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	570		937		0	1781
V/C Ratio(X)	0.91		1.01		0.00	0.45
Avail Cap(c_a), veh/h	667		937		0	1781
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.44	0.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	0.2	0.0	0.0	11.4
Incr Delay (d2), s/veh	15.1	0.0	21.5	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	5.7	0.0	0.0	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.1	0.0	21.7	0.0	0.0	12.2
LnGrp LOS	D		F		A	B
Approach Vol, veh/h	519		945			797
Approach Delay, s/veh	38.1		21.7			12.2
Approach LOS	D		C			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	39.4		39.4		26.8	
Change Period (Y+Rc), s	4.6		4.6		4.6	
Max Green Setting (Gmax), s	34.8		34.8		26.0	
Max Q Clear Time (g_c+I1), s	36.8		12.1		21.4	
Green Ext Time (p_c), s	0.0		5.9		0.8	
Intersection Summary						
HCM 6th Ctrl Delay			22.1			
HCM 6th LOS			C			

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

CUPP_PM
21: Ocean St & Broadway

CUPP_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	548	47	102	461	118	0	521	89	0	699	374
Future Volume (veh/h)	277	548	47	102	461	118	0	521	89	0	699	374
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1841	1900	1885	1870	0	1900	1900	0	1885	1900
Adj Flow Rate, veh/h	277	548	47	102	461	118	0	521	89	0	699	374
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	4	0	1	2	0	0	0	0	1	0
Cap, veh/h	312	750	64	130	486	124	0	1283	551	0	775	414
Arrive On Green	0.17	0.44	0.44	0.07	0.34	0.34	0.00	0.36	0.36	0.00	0.36	0.36
Sat Flow, veh/h	1810	1707	146	1810	1435	367	0	3705	1552	0	2274	1165
Grp Volume(v), veh/h	277	0	595	102	0	579	0	521	89	0	574	499
Grp Sat Flow(s), veh/h/ln	1810	0	1853	1810	0	1802	0	1805	1552	0	1791	1553
Q Serve(g_s), s	13.5	0.0	23.9	5.0	0.0	28.2	0.0	9.8	3.5	0.0	27.4	27.5
Cycle Q Clear(g_c), s	13.5	0.0	23.9	5.0	0.0	28.2	0.0	9.8	3.5	0.0	27.4	27.5
Prop In Lane	1.00		0.08	1.00		0.20	0.00		1.00	0.00		0.75
Lane Grp Cap(c), veh/h	312	0	814	130	0	611	0	1283	551	0	636	552
V/C Ratio(X)	0.89	0.00	0.73	0.78	0.00	0.95	0.00	0.41	0.16	0.00	0.90	0.90
Avail Cap(c_a), veh/h	322	0	814	161	0	621	0	1283	551	0	636	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.64	0.64
Uniform Delay (d), s/veh	36.4	0.0	20.8	41.1	0.0	29.0	0.0	21.9	19.8	0.0	27.5	27.6
Incr Delay (d2), s/veh	24.2	0.0	3.4	18.2	0.0	23.8	0.0	1.0	0.6	0.0	12.9	14.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	10.5	2.9	0.0	15.7	0.0	4.2	3.8	0.0	13.5	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	0.0	24.2	59.2	0.0	52.8	0.0	22.8	20.5	0.0	40.4	42.2
LnGrp LOS	E	A	C	E	A	D	A	C	C	A	D	D
Approach Vol, veh/h	872			681			610			1073		
Approach Delay, s/veh	35.7			53.7			22.5			41.3		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	43.6			36.0	19.5	34.5		36.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	39.0			31.0	16.0	31.0		31.0				
Max Q Clear Time (g_c+11), s	25.9			11.8	15.5	30.2		29.5				
Green Ext Time (p_c), s	0.0	3.3		3.7	0.1	0.3		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				38.9								
HCM 6th LOS				D								

CUPP_PM
22: Riverside Ave/Dakota Ave & Soquel Ave

CUPP_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (veh/h)	13	974	3	11	708	17	36	17	85	29	2	72
Future Volume (veh/h)	13	974	3	11	708	17	36	17	85	29	2	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.92	0.99		0.92	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1870	1796	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	974	3	11	708	17	36	17	85	29	2	72
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	1	0	0	2	7	0	0	0	0	0	0
Cap, veh/h	73	1406	4	73	1354	32	217	128	422	230	56	470
Arrive On Green	0.40	0.40	0.40	0.79	0.79	0.79	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	15	3547	11	16	3417	81	308	294	967	335	128	1077
Grp Volume(v), veh/h	516	0	474	385	0	351	138	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	1861	0	1712	1835	0	1679	1570	0	0	1540	0	0
Q Serve(g_s), s	0.0	0.0	12.7	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	12.7	4.0	0.0	4.1	2.8	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.03		0.01	0.03		0.05	0.26		0.62	0.28		0.70
Lane Grp Cap(c), veh/h	805	0	679	795	0	666	768	0	0	756	0	0
V/C Ratio(X)	0.64	0.00	0.70	0.48	0.00	0.53	0.18	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	805	0	679	795	0	666	768	0	0	756	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.75	0.00	0.75	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.8	0.0	13.9	3.9	0.0	3.9	9.5	0.0	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	3.9	0.0	5.9	1.6	0.0	2.2	0.5	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	5.3	1.2	0.0	1.2	1.0	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	19.7	5.4	0.0	6.1	10.0	0.0	0.0	9.7	0.0	0.0
LnGrp LOS	B	A	B	A	A	A	B	A	A	A	A	A
Approach Vol, veh/h	990		736			138			103			
Approach Delay, s/veh	18.7		5.8			10.0			9.7			
Approach LOS	B		A			B			A			
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	26.4		28.6		26.4		28.6					
Change Period (Y+Rc), s	4.6		4.6		4.6		4.6					
Max Green Setting (Gmax), s	21.8		24.0		21.8		24.0					
Max Q Clear Time (g_c+I1), s	14.7		4.8		6.1		4.0					
Green Ext Time (p_c), s	3.6		0.7		4.2		0.5					
Intersection Summary												
HCM 6th Ctrl Delay	12.8											
HCM 6th LOS	B											



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	645	129	249	442	83	318	832	421	468	512	274
Future Volume (veh/h)	273	645	129	249	442	83	318	832	421	468	512	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1900	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	273	645	129	249	442	83	318	832	421	468	512	274
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0	1	1	1
Cap, veh/h	261	697	139	230	781	335	350	814	356	473	1066	459
Arrive On Green	0.15	0.24	0.24	0.13	0.22	0.22	0.19	0.23	0.23	0.26	0.30	0.30
Sat Flow, veh/h	1795	2949	589	1810	3582	1535	1810	3582	1568	1795	3582	1542
Grp Volume(v), veh/h	273	391	383	249	442	83	318	832	421	468	512	274
Grp Sat Flow(s),veh/h/ln	1795	1791	1746	1810	1791	1535	1810	1791	1568	1795	1791	1542
Q Serve(g_s), s	16.0	23.5	23.6	14.0	12.1	4.9	18.9	25.0	25.0	28.6	12.9	16.7
Cycle Q Clear(g_c), s	16.0	23.5	23.6	14.0	12.1	4.9	18.9	25.0	25.0	28.6	12.9	16.7
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	423	413	230	781	335	350	814	356	473	1066	459
V/C Ratio(X)	1.05	0.92	0.93	1.08	0.57	0.25	0.91	1.02	1.18	0.99	0.48	0.60
Avail Cap(c_a), veh/h	261	423	413	230	781	335	510	814	356	473	1066	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.31	0.31	0.31	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	41.0	41.1	48.0	38.4	35.5	43.4	42.5	42.5	40.3	31.7	33.0
Incr Delay (d2), s/veh	55.1	19.5	20.3	57.2	0.9	0.5	10.1	33.9	102.7	38.2	1.6	5.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	12.5	12.3	9.9	5.4	1.9	9.4	14.7	19.7	17.4	5.8	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.1	60.5	61.3	105.2	39.3	36.1	53.5	76.4	145.2	78.6	33.2	38.6
LnGrp LOS	F	E	E	F	D	D	D	F	F	E	C	D
Approach Vol, veh/h	1047				774				1571		1254	
Approach Delay, s/veh	71.7				60.1				90.2		51.3	
Approach LOS	E				E				F		D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	30.0	33.0	29.0	20.0	28.0	25.3	36.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	26.0	29.0	25.0	16.0	24.0	31.0	23.0				
Max Q Clear Time (g_c+11g), s	4.0	25.6	30.6	27.0	18.0	14.1	20.9	18.7				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	2.3	0.4	1.8				

Intersection Summary

HCM 6th Ctrl Delay	70.5
HCM 6th LOS	E

CUPP_PM
24: Branciforte Ave & Soquel Ave

CUPP_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	896	112	101	657	34	56	143	79	58	170	117
Future Volume (veh/h)	164	896	112	101	657	34	56	143	79	58	170	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.92	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1870	1885	1870
Adj Flow Rate, veh/h	164	896	112	101	657	34	56	143	79	58	170	117
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	2	1	2
Cap, veh/h	414	1635	204	153	651	34	93	161	76	122	280	349
Arrive On Green	0.23	0.52	0.52	0.08	0.37	0.37	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3174	397	1810	1754	91	137	705	334	253	1227	1525
Grp Volume(v), veh/h	164	506	502	101	0	691	278	0	0	228	0	117
Grp Sat Flow(s), veh/h/ln	1810	1791	1780	1810	0	1845	1176	0	0	1480	0	1525
Q Serve(g_s), s	5.4	13.3	13.3	3.8	0.0	26.0	6.9	0.0	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	5.4	13.3	13.3	3.8	0.0	26.0	16.0	0.0	0.0	9.1	0.0	4.5
Prop In Lane	1.00		0.22	1.00		0.05	0.20		0.28	0.25		1.00
Lane Grp Cap(c), veh/h	414	923	917	153	0	685	331	0	0	403	0	349
V/C Ratio(X)	0.40	0.55	0.55	0.66	0.00	1.01	0.84	0.00	0.00	0.57	0.00	0.34
Avail Cap(c_a), veh/h	414	923	917	414	0	685	331	0	0	403	0	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	0.27	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	11.5	11.5	31.0	0.0	22.0	27.4	0.0	0.0	24.0	0.0	22.6
Incr Delay (d2), s/veh	0.8	0.6	0.6	4.7	0.0	36.5	17.4	0.0	0.0	1.8	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.8	4.7	1.8	0.0	17.1	6.1	0.0	0.0	3.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	12.1	12.1	35.8	0.0	58.5	44.8	0.0	0.0	25.8	0.0	23.1
LnGrp LOS	C	B	B	D	A	F	D	A	A	C	A	C
Approach Vol, veh/h	1172			792			278			345		
Approach Delay, s/veh	13.7			55.6			44.8			24.9		
Approach LOS	B			E			D			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	40.1		20.0	20.0	30.0		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	26.0		16.0	16.0	26.0		16.0				
Max Q Clear Time (g_c+15), s	15.8	15.3		11.1	7.4	28.0		18.0				
Green Ext Time (p_c), s	0.1	4.8		0.8	0.3	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				31.4								
HCM 6th LOS				C								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1128	125	179	663	16	217	45	223	90	128	70
Future Volume (veh/h)	32	1128	125	179	663	16	217	45	223	90	128	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.89	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1870	1885	1900	1885	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	32	1128	125	179	663	16	217	45	223	90	128	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	2	1	0	1	0	0	0	2	0
Cap, veh/h	40	1224	135	196	856	21	257	53	245	129	183	257
Arrive On Green	0.02	0.38	0.38	0.11	0.47	0.47	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3222	356	1781	1830	44	1511	313	1438	757	1076	1511
Grp Volume(v), veh/h	32	626	627	179	0	679	262	0	223	218	0	70
Grp Sat Flow(s), veh/h/ln	1810	1791	1787	1781	0	1874	1824	0	1438	1833	0	1511
Q Serve(g_s), s	1.8	33.3	33.5	9.9	0.0	30.2	13.9	0.0	15.2	11.2	0.0	4.0
Cycle Q Clear(g_c), s	1.8	33.3	33.5	9.9	0.0	30.2	13.9	0.0	15.2	11.2	0.0	4.0
Prop In Lane	1.00		0.20	1.00		0.02	0.83		1.00	0.41		1.00
Lane Grp Cap(c), veh/h	40	681	679	196	0	877	310	0	245	312	0	257
V/C Ratio(X)	0.80	0.92	0.92	0.91	0.00	0.77	0.84	0.00	0.91	0.70	0.00	0.27
Avail Cap(c_a), veh/h	72	681	679	196	0	877	310	0	245	312	0	257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.7	29.5	29.6	44.0	0.0	22.2	40.2	0.0	40.8	39.1	0.0	36.1
Incr Delay (d2), s/veh	29.1	19.6	20.2	40.9	0.0	6.6	23.6	0.0	38.6	12.3	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	17.5	17.6	6.6	0.0	14.3	8.2	0.0	7.9	6.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.8	49.1	49.8	84.9	0.0	28.8	63.8	0.0	79.4	51.4	0.0	38.7
LnGrp LOS	E	D	D	F	A	C	E	A	E	D	A	D
Approach Vol, veh/h	1285			858			485			288		
Approach Delay, s/veh	50.2			40.5			71.0			48.3		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	43.0		21.0	6.2	51.8		21.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	1.0	38.0		17.0	4.0	45.0		17.0				
Max Q Clear Time (g_c+I1), s	1.0	35.5		17.2	3.8	32.2		13.2				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	3.9		0.5				

Intersection Summary

HCM 6th Ctrl Delay	50.6
HCM 6th LOS	D



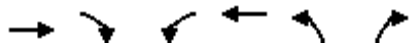
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↱	↱		↰	↱		↰	↱		↰	↱	↱
Traffic Volume (veh/h)	561	1722	38	63	1525	36	19	127	30	293	233	110
Future Volume (veh/h)	561	1722	38	63	1525	36	19	127	30	293	233	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	561	1722	38	63	1525	0	19	127	30	293	233	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	624	1884	41	81	1404		316	446	105	373	570	
Arrive On Green	0.18	0.52	0.52	0.04	0.39	0.00	0.30	0.30	0.30	0.30	0.30	0.00
Sat Flow, veh/h	3510	3611	79	1810	3705	0	1166	1486	351	1249	1900	1610
Grp Volume(v), veh/h	561	859	901	63	1525	0	19	0	157	293	233	0
Grp Sat Flow(s), veh/h/ln	1755	1805	1886	1810	1805	0	1166	0	1837	1249	1900	1610
Q Serve(g_s), s	14.1	39.1	39.4	3.1	35.0	0.0	1.2	0.0	5.9	21.1	8.8	0.0
Cycle Q Clear(g_c), s	14.1	39.1	39.4	3.1	35.0	0.0	10.0	0.0	5.9	27.0	8.8	0.0
Prop In Lane	1.00		0.04	1.00		0.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	624	942	984	81	1404		316	0	551	373	570	
V/C Ratio(X)	0.90	0.91	0.92	0.77	1.09		0.06	0.00	0.28	0.79	0.41	
Avail Cap(c_a), veh/h	624	942	984	101	1404		316	0	551	373	570	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.2	19.6	19.7	42.5	27.5	0.0	29.1	0.0	24.1	34.4	25.1	0.0
Incr Delay (d2), s/veh	15.6	14.5	14.5	16.2	48.9	0.0	0.1	0.0	0.3	9.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	18.6	19.6	1.7	23.8	0.0	0.3	0.0	2.6	7.2	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	34.1	34.2	58.8	76.4	0.0	29.2	0.0	24.4	44.2	25.3	0.0
LnGrp LOS	D	C	C	E	F		C	A	C	D	C	
Approach Vol, veh/h	2321			1588			176			526		
Approach Delay, s/veh	38.4			75.7			24.9			35.8		
Approach LOS	D			E			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	51.0		31.0	20.0	39.0		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	46.0		27.0	16.0	35.0		27.0				
Max Q Clear Time (g_c+15), s	41.4			29.0	16.1	37.0		12.0				
Green Ext Time (p_c), s	0.0	3.9		0.0	0.0	0.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay	50.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (veh/h)	1782	93	226	1452	146	433
Future Volume (veh/h)	1782	93	226	1452	146	433
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1870	1900	1870	1900	1885
Adj Flow Rate, veh/h	1782	93	226	1452	146	433
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	2	0	2	0	1
Cap, veh/h	1766	91	241	2448	402	568
Arrive On Green	0.68	0.68	0.13	0.69	0.22	0.22
Sat Flow, veh/h	3549	179	1810	3647	1810	1598
Grp Volume(v), veh/h	915	960	226	1452	146	433
Grp Sat Flow(s), veh/h/ln	1791	1843	1810	1777	1810	1598
Q Serve(g_s), s	45.9	46.0	11.1	19.3	6.1	20.0
Cycle Q Clear(g_c), s	45.9	46.0	11.1	19.3	6.1	20.0
Prop In Lane		0.10	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	915	942	241	2448	402	568
V/C Ratio(X)	1.00	1.02	0.94	0.59	0.36	0.76
Avail Cap(c_a), veh/h	915	942	241	2448	402	568
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	0.64	0.64	1.00	1.00
Uniform Delay (d), s/veh	14.4	14.4	38.6	7.4	29.6	25.6
Incr Delay (d2), s/veh	17.0	21.9	30.3	0.2	2.5	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	18.0	6.9	6.1	2.9	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	36.3	68.9	7.6	32.1	35.0
LnGrp LOS	C	F	E	A	C	C
Approach Vol, veh/h	1875			1678	579	
Approach Delay, s/veh	33.9			15.9	34.3	
Approach LOS	C			B	C	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	60.0	50.0		66.0	24.0	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	46.0	46.0		62.0	20.0	
Max Q Clear Time (g_c+I1), s	48.0	48.0		21.3	22.0	
Green Ext Time (p_c), s	0.0	0.0		16.0	0.0	
Intersection Summary						
HCM 6th Ctrl Delay			26.6			
HCM 6th LOS			C			

CUPP_PM
28: Hagemann Ave/Trevethan Ave & Soquel Ave

CUPP_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	2111	53	22	1530	24	77	14	34	74	14	95
Future Volume (veh/h)	77	2111	53	22	1530	24	77	14	34	74	14	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	77	2111	53	22	1530	24	77	14	34	74	14	95
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	99	2373	59	43	2269	36	204	43	68	153	42	150
Arrive On Green	0.11	1.00	1.00	0.05	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	3566	89	1810	3578	56	785	245	385	547	234	843
Grp Volume(v), veh/h	77	1054	1110	22	759	795	125	0	0	183	0	0
Grp Sat Flow(s), veh/h/ln	1810	1791	1865	1810	1777	1857	1415	0	0	1624	0	0
Q Serve(g_s), s	3.7	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.1	0.0	0.0	7.1	0.0	0.0	8.8	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.03	0.62		0.27	0.40		0.52
Lane Grp Cap(c), veh/h	99	1192	1241	43	1127	1178	316	0	0	345	0	0
V/C Ratio(X)	0.78	0.88	0.89	0.52	0.67	0.68	0.40	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	181	1192	1241	101	1127	1178	316	0	0	345	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.17	0.17	0.17	0.75	0.75	0.75	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.5	0.0	0.0	42.4	0.0	0.0	33.2	0.0	0.0	34.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	1.9	2.0	7.1	2.4	2.3	3.7	0.0	0.0	5.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.6	0.7	0.6	0.8	0.8	2.7	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	1.9	2.0	49.5	2.4	2.3	36.9	0.0	0.0	39.7	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D	A	A	D	A	A
Approach Vol, veh/h	2241			1576			125			183		
Approach Delay, s/veh	3.3			3.0			36.9			39.7		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	63.9			20.0	8.9	61.1		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	57.0			16.0	9.0	53.0		16.0				
Max Q Clear Time (g_c+I13), s	2.0			10.8	5.7	2.0		9.1				
Green Ext Time (p_c), s	0.0	35.6		0.3	0.0	17.8		0.2				

Intersection Summary

HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	2166	30	12	1436	28	53	18	26	128	7	70
Future Volume (veh/h)	39	2166	30	12	1436	28	53	18	26	128	7	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1870	1856	1900	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	39	2166	30	12	1436	28	53	18	26	128	7	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	2	3	0	0	0	0	0	3
Cap, veh/h	101	2339	32	26	2177	42	181	64	67	216	15	86
Arrive On Green	0.06	0.65	0.65	0.01	0.61	0.61	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3586	50	1810	3562	69	717	389	405	915	88	520
Grp Volume(v), veh/h	39	1070	1126	12	716	748	97	0	0	205	0	0
Grp Sat Flow(s), veh/h/ln	1810	1777	1859	1810	1777	1854	1511	0	0	1524	0	0
Q Serve(g_s), s	1.9	47.4	48.1	0.6	23.6	23.7	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	1.9	47.4	48.1	0.6	23.6	23.7	4.9	0.0	0.0	11.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.04	0.55		0.27	0.62		0.34
Lane Grp Cap(c), veh/h	101	1159	1213	26	1086	1133	312	0	0	317	0	0
V/C Ratio(X)	0.39	0.92	0.93	0.46	0.66	0.66	0.31	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	121	1159	1213	101	1086	1133	346	0	0	350	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.36	0.36	0.36	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	13.7	13.8	44.0	11.4	11.4	33.3	0.0	0.0	35.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	5.8	5.9	4.0	2.7	2.6	0.6	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	17.5	18.6	0.3	9.0	9.4	1.9	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	19.4	19.7	48.0	14.1	14.0	33.8	0.0	0.0	39.4	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	C	A	A	D	A	A
Approach Vol, veh/h	2235			1476			97			205		
Approach Delay, s/veh	19.9			14.3			33.8			39.4		
Approach LOS	B			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	62.7		18.9	9.0	59.0		18.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	56.0		17.0	6.0	55.0		17.0				
Max Q Clear Time (g_c+12, s)	12.6	50.1		6.9	3.9	25.7		13.4				
Green Ext Time (p_c), s	0.0	5.5		0.3	0.0	13.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				19.2								
HCM 6th LOS				B								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	935	1153	79	693	25	714	16	77	47	25	28
Future Volume (veh/h)	20	935	1153	79	693	25	714	16	77	47	25	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1885	1870	1870	1900	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	20	935	0	79	693	25	725	0	0	47	25	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	1	2	2	0	1	0	0	0	0	0
Cap, veh/h	35	2008		79	2060	74	718	0		86	46	111
Arrive On Green	0.02	0.57	0.00	0.04	0.59	0.59	0.20	0.00	0.00	0.07	0.07	0.07
Sat Flow, veh/h	1810	3554	1598	1781	3492	126	3591	0	1610	1201	639	1543
Grp Volume(v), veh/h	20	935	0	79	352	366	725	0	0	72	0	28
Grp Sat Flow(s),veh/h/ln	1810	1777	1598	1781	1777	1841	1795	0	1610	1840	0	1543
Q Serve(g_s), s	1.5	21.0	0.0	6.0	13.7	13.7	27.0	0.0	0.0	5.1	0.0	2.3
Cycle Q Clear(g_c), s	1.5	21.0	0.0	6.0	13.7	13.7	27.0	0.0	0.0	5.1	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	35	2008		79	1048	1086	718	0		132	0	111
V/C Ratio(X)	0.57	0.47		1.00	0.34	0.34	1.01	0.00		0.54	0.00	0.25
Avail Cap(c_a), veh/h	67	2008		79	1048	1086	718	0		300	0	251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.6	17.3	0.0	64.5	14.2	14.2	54.0	0.0	0.0	60.5	0.0	59.2
Incr Delay (d2), s/veh	2.0	0.3	0.0	100.4	0.9	0.8	36.0	0.0	0.0	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.6	0.0	4.9	5.7	6.0	15.8	0.0	0.0	2.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	17.6	0.0	164.9	15.0	15.0	90.0	0.0	0.0	61.8	0.0	59.6
LnGrp LOS	E	B		F	B	B	F	A		E	A	E
Approach Vol, veh/h	955				797		725				100	
Approach Delay, s/veh	18.7				29.9		90.0				61.2	
Approach LOS	B				C		F				E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	80.3			13.7	6.6	83.6		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	64.0			22.0	5.0	65.0		27.0				
Max Q Clear Time (g_c+1/3g), s	23.0			7.1	3.5	15.7		29.0				
Green Ext Time (p_c), s	0.0	8.3		0.2	0.0	5.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay 43.8

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	160	89	127	24	27	82	53	820	28	53	897	108
Future Volume (veh/h)	160	89	127	24	27	82	53	820	28	53	897	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	160	89	127	24	27	82	53	820	28	53	897	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	129	315	118	133	214	124	985	34	124	898	108
Arrive On Green	0.20	0.20	0.20	0.13	0.13	0.13	0.07	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1183	658	1610	874	983	1586	1810	3562	122	1810	3244	391
Grp Volume(v), veh/h	249	0	127	51	0	82	53	416	432	53	499	506
Grp Sat Flow(s), veh/h/ln	1841	0	1610	1856	0	1586	1810	1805	1878	1810	1805	1830
Q Serve(g_s), s	7.5	0.0	4.1	1.4	0.0	2.8	1.7	12.8	12.8	1.7	16.4	16.4
Cycle Q Clear(g_c), s	7.5	0.0	4.1	1.4	0.0	2.8	1.7	12.8	12.8	1.7	16.4	16.4
Prop In Lane	0.64		1.00	0.47		1.00	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	360	0	315	250	0	214	124	499	520	124	499	506
V/C Ratio(X)	0.69	0.00	0.40	0.20	0.00	0.38	0.43	0.83	0.83	0.43	1.00	1.00
Avail Cap(c_a), veh/h	882	0	772	282	0	241	214	524	545	214	499	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	20.8	22.8	0.0	23.4	26.5	20.1	20.1	26.5	21.4	21.4
Incr Delay (d2), s/veh	2.9	0.0	1.0	0.4	0.0	1.1	0.9	10.3	9.9	0.9	40.1	39.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	1.5	0.6	0.0	1.0	0.7	6.3	6.5	0.7	11.8	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.0	0.0	21.8	23.2	0.0	24.5	27.3	30.4	30.1	27.3	61.5	61.2
LnGrp LOS	C	A	C	C	A	C	C	C	C	C	E	E
Approach Vol, veh/h	376		133		901		1058					
Approach Delay, s/veh	23.9		24.0		30.1		59.7					
Approach LOS	C		C		C		E					
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	8.7	21.8	16.2		8.7	21.8	12.6					
Change Period (Y+Rc), s	4.6	* 5.4	4.6		4.6	5.4	4.6					
Max Green Setting (Gmax), s	7.0	* 17	28.4		7.0	16.4	9.0					
Max Q Clear Time (g_c+13), s	14.8		9.5		3.7	18.4	4.8					
Green Ext Time (p_c), s	0.0	1.1	2.2		0.0	0.0	0.2					

Intersection Summary

HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 12.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	301	117	107	18	2	149	49	120	1	39	2
Future Vol, veh/h	18	301	117	107	18	2	149	49	120	1	39	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	2	5	3	0	0	1	0	0	0	0	0
Mvmt Flow	18	301	117	107	18	2	149	49	120	1	39	2
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	12.9	11.3	13.1	9.4
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	47%	6%	0%	86%	0%	2%
Vol Thru, %	15%	94%	0%	14%	0%	93%
Vol Right, %	38%	0%	100%	0%	100%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	318	319	117	125	2	42
LT Vol	149	18	0	107	0	1
Through Vol	49	301	0	18	0	39
RT Vol	120	0	117	0	2	2
Lane Flow Rate	318	319	117	125	2	42
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.471	0.511	0.165	0.23	0.003	0.069
Departure Headway (Hd)	5.333	5.768	5.065	6.61	5.411	5.952
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	674	625	709	544	661	601
Service Time	3.366	3.496	2.793	4.349	3.15	4
HCM Lane V/C Ratio	0.472	0.51	0.165	0.23	0.003	0.07
HCM Control Delay	13.1	14.4	8.8	11.3	8.2	9.4
HCM Lane LOS	B	B	A	B	A	A
HCM 95th-tile Q	2.5	2.9	0.6	0.9	0	0.2

Intersection						
Int Delay, s/veh	7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	76	745	70	45	606
Future Vol, veh/h	90	76	745	70	45	606
Conflicting Peds, #/hr	7	1	0	43	43	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	0	0	4
Mvmt Flow	90	76	745	70	45	606
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1526	824	0	0	858	0
Stage 1	823	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.42	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	130	371	-	-	791	-
Stage 1	431	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	113	357	-	-	763	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	66.3	0	0.7			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 113 357	763	-		
HCM Lane V/C Ratio	-	- 0.796 0.213	0.059	-		
HCM Control Delay (s)	-	- 107.3 17.8	10	0		
HCM Lane LOS	-	- F C	B	A		
HCM 95th %tile Q(veh)	-	- 4.5 0.8	0.2	-		

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	20	795	0	0	696
Future Vol, veh/h	60	20	795	0	0	696
Conflicting Peds, #/hr	22	0	0	54	54	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	60	20	795	0	0	696
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1165	795	0	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.6	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	203	391	-	0	0	-
Stage 1	448	-	-	0	0	-
Stage 2	675	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	199	391	-	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	29.2	0	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 227		-			
HCM Lane V/C Ratio	- 0.352		-			
HCM Control Delay (s)	- 29.2		-			
HCM Lane LOS	- D		-			
HCM 95th %tile Q(veh)	- 1.5		-			

Appendix I

*Analysis Worksheets for Existing (2023) Plus Approved
Projects Plus Project Improvement Conditions*

Ex+AP+P (IMP)_AM
6: Front St & Laurel St

Ex+AP+P (IMP)_AM
Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	324	42	284	385	121	54	165	336	37	164	74
Future Volume (veh/h)	100	324	42	284	385	121	54	165	336	37	164	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1885	1841	1885	1885	1885	1885	1900	1737	1856	1826	1767
Adj Flow Rate, veh/h	110	356	46	312	423	133	59	181	369	41	180	81
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	1	4	1	1	1	1	0	11	3	5	9
Cap, veh/h	180	648	83	339	548	464	140	461	357	111	416	341
Arrive On Green	0.10	0.20	0.20	0.19	0.29	0.29	0.08	0.24	0.24	0.06	0.23	0.23
Sat Flow, veh/h	1781	3193	409	1795	1885	1598	1795	1900	1472	1767	1826	1497
Grp Volume(v), veh/h	110	198	204	312	423	133	59	181	369	41	180	81
Grp Sat Flow(s),veh/h/ln	1781	1791	1811	1795	1885	1598	1795	1900	1472	1767	1826	1497
Q Serve(g_s), s	4.1	7.0	7.1	11.9	14.4	4.5	2.2	5.6	17.0	1.6	5.9	3.1
Cycle Q Clear(g_c), s	4.1	7.0	7.1	11.9	14.4	4.5	2.2	5.6	17.0	1.6	5.9	3.1
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	363	367	339	548	464	140	461	357	111	416	341
V/C Ratio(X)	0.61	0.55	0.55	0.92	0.77	0.29	0.42	0.39	1.03	0.37	0.43	0.24
Avail Cap(c_a), veh/h	204	363	367	339	548	464	205	461	357	202	443	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	25.0	25.1	27.9	22.7	19.2	30.8	22.2	26.5	31.5	23.2	22.1
Incr Delay (d2), s/veh	2.3	5.6	5.7	29.2	10.1	1.5	0.7	0.5	56.1	0.8	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.4	3.5	7.6	7.5	1.8	0.9	2.4	11.2	0.7	2.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	30.6	30.7	57.1	32.8	20.8	31.5	22.7	82.6	32.2	23.9	22.4
LnGrp LOS	C	C	C	E	C	C	C	C	F	C	C	C
Approach Vol, veh/h		512			868			609			302	
Approach Delay, s/veh		31.1			39.7			59.9			24.6	
Approach LOS		C			D			E			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	24.9	9.7	20.5	17.4	18.8	8.6	21.6				
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	* 8	19.4	* 8	17.0	* 13	14.2	* 8	17.0				
Max Q Clear Time (g_c+I1), s	6.1	16.4	4.2	7.9	13.9	9.1	3.6	19.0				
Green Ext Time (p_c), s	0.0	0.9	0.0	0.8	0.0	1.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			41.2									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

EX+AP+P (IMP)_PM
6: Front St & Laurel St

EX+AP+P (IMP)_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	531	62	291	366	118	42	189	333	73	310	136
Future Volume (veh/h)	140	531	62	291	366	118	42	189	333	73	310	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	144	547	64	300	377	122	43	195	343	75	320	140
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	194	679	79	331	540	457	117	451	382	159	494	419
Arrive On Green	0.11	0.21	0.21	0.18	0.28	0.28	0.06	0.24	0.24	0.09	0.26	0.26
Sat Flow, veh/h	1810	3257	380	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	144	303	308	300	377	122	43	195	343	75	320	140
Grp Sat Flow(s),veh/h/ln	1810	1805	1832	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	5.4	11.2	11.2	11.4	12.4	4.1	1.6	6.1	14.5	2.8	10.5	4.9
Cycle Q Clear(g_c), s	5.4	11.2	11.2	11.4	12.4	4.1	1.6	6.1	14.5	2.8	10.5	4.9
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	376	382	331	540	457	117	451	382	159	494	419
V/C Ratio(X)	0.74	0.80	0.81	0.91	0.70	0.27	0.37	0.43	0.90	0.47	0.65	0.33
Avail Cap(c_a), veh/h	222	376	382	331	540	457	207	461	391	207	494	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	26.3	26.4	28.0	22.4	19.4	31.4	22.7	25.9	30.4	23.0	21.0
Incr Delay (d2), s/veh	7.8	14.9	15.0	26.7	7.3	1.4	0.7	0.7	22.4	0.8	2.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.1	6.2	7.1	6.3	1.6	0.7	2.7	7.6	1.2	4.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	41.2	41.4	54.8	29.7	20.8	32.1	23.3	48.3	31.2	26.0	21.4
LnGrp LOS	D	D	D	D	C	C	C	C	D	C	C	C
Approach Vol, veh/h		755			799			581			535	
Approach Delay, s/veh		40.7			37.8			38.7			25.5	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	24.5	8.7	22.8	17.0	19.2	10.3	21.2				
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6	* 4.2	4.6				
Max Green Setting (Gmax), s	* 8.6	18.8	* 8	17.0	* 13	14.6	* 8	17.0				
Max Q Clear Time (g_c+I1), s	7.4	14.4	3.6	12.5	13.4	13.2	4.8	16.5				
Green Ext Time (p_c), s	0.0	1.1	0.0	1.0	0.0	0.5	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix J

*Analysis Worksheets for Cumulative (2030) Plus
Project Improvement Conditions*

CUPP_PM (IMP)
5: Pacific Ave & Laurel St

CUPP_PM (IMP)
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	1120	73	83	1031	91	81	96	60	97	59	63
Future Volume (veh/h)	162	1120	73	83	1031	91	81	96	60	97	59	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	0.79		0.62	0.87		0.61
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	162	1120	73	83	1031	91	81	96	60	97	59	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	184	1134	74	113	1047	92	141	146	91	131	100	106
Arrive On Green	0.10	0.66	0.66	0.06	0.62	0.62	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	1729	113	1810	1698	150	1018	835	522	1044	570	608
Grp Volume(v), veh/h	162	0	1193	83	0	1122	81	0	156	97	0	122
Grp Sat Flow(s),veh/h/ln	1810	0	1842	1810	0	1848	1018	0	1357	1044	0	1178
Q Serve(g_s), s	10.6	0.0	75.9	5.4	0.0	71.1	9.5	0.0	12.9	8.1	0.0	11.4
Cycle Q Clear(g_c), s	10.6	0.0	75.9	5.4	0.0	71.1	21.0	0.0	12.9	21.0	0.0	11.4
Prop In Lane	1.00		0.06	1.00		0.08	1.00		0.38	1.00		0.52
Lane Grp Cap(c), veh/h	184	0	1208	113	0	1139	141	0	238	131	0	206
V/C Ratio(X)	0.88	0.00	0.99	0.73	0.00	0.98	0.57	0.00	0.66	0.74	0.00	0.59
Avail Cap(c_a), veh/h	184	0	1208	127	0	1139	141	0	238	131	0	206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.39	0.00	0.39	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.2	0.0	20.2	55.3	0.0	22.5	55.2	0.0	46.1	57.0	0.0	45.6
Incr Delay (d2), s/veh	34.3	0.0	23.1	6.0	0.0	13.5	5.6	0.0	6.4	20.0	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	36.8	2.7	0.0	32.5	2.7	0.0	4.8	3.7	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.5	0.0	43.2	61.2	0.0	35.9	60.8	0.0	52.6	77.0	0.0	50.0
LnGrp LOS	F	A	D	E	A	D	E	A	D	E	A	D
Approach Vol, veh/h		1355			1205			237			219	
Approach Delay, s/veh		48.5			37.7			55.4			62.0	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.4	78.6		25.0	11.7	83.3		25.0				
Change Period (Y+Rc), s	* 4.2	4.6		4.0	* 4.2	4.6		4.0				
Max Green Setting (Gmax), s	* 12	74.0		21.0	* 8.4	77.8		21.0				
Max Q Clear Time (g_c+I1), s	12.6	73.1		23.0	7.4	77.9		23.0				
Green Ext Time (p_c), s	0.0	0.7		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			45.7									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

CUPP_PM (IMP)
6: Front St & Laurel St

CUPP_PM (IMP)
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1022	56	317	864	195	26	258	330	202	410	275
Future Volume (veh/h)	175	1022	56	317	864	195	26	258	330	202	410	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	175	1022	56	317	864	195	26	258	330	202	410	275
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	186	1294	71	344	872	739	72	316	574	219	470	398
Arrive On Green	0.10	0.37	0.37	0.19	0.46	0.46	0.04	0.17	0.17	0.12	0.25	0.25
Sat Flow, veh/h	1810	3480	191	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	175	530	548	317	864	195	26	258	330	202	410	275
Grp Sat Flow(s),veh/h/ln	1810	1805	1866	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	10.6	28.7	28.7	18.9	49.6	8.2	1.5	14.4	18.3	12.2	22.8	17.1
Cycle Q Clear(g_c), s	10.6	28.7	28.7	18.9	49.6	8.2	1.5	14.4	18.3	12.2	22.8	17.1
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	671	694	344	872	739	72	316	574	219	470	398
V/C Ratio(X)	0.94	0.79	0.79	0.92	0.99	0.26	0.36	0.82	0.58	0.92	0.87	0.69
Avail Cap(c_a), veh/h	186	671	694	344	872	739	132	316	574	219	470	398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.20	0.20	0.20	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	30.7	30.7	43.7	29.5	18.3	51.4	44.2	28.7	47.8	39.7	37.6
Incr Delay (d2), s/veh	16.9	2.0	1.9	24.4	24.7	0.7	1.1	15.2	1.4	39.6	16.3	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	12.6	13.0	10.7	27.6	3.2	0.7	8.1	7.2	7.9	12.6	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.9	32.7	32.6	68.1	54.2	19.0	52.6	59.4	30.1	87.4	56.0	42.6
LnGrp LOS	E	C	C	E	D	B	D	E	C	F	E	D
Approach Vol, veh/h	1253				1376				614		887	
Approach Delay, s/veh	37.3				52.5				43.4		59.0	
Approach LOS	D				D				D		E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	55.1	55.1	8.1	31.8	24.6	45.5	17.0	22.9				
Change Period (Y+Rc), s	3.7	4.6	3.7	4.6	3.7	4.6	3.7	4.6				
Max Green Setting (Gmax), s	50.5	50.5	8.0	23.6	20.9	40.9	13.3	18.3				
Max Q Clear Time (g_c+I1), s	51.6	51.6	3.5	24.8	20.9	30.7	14.2	20.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	47.9											
HCM 6th LOS	D											

CUPP_PM (IMP)
18: Chestnut St & Laurel St

CUPP_PM (IMP)
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	1051	91	79	923	28	141	59	95	32	72	76
Future Volume (veh/h)	111	1051	91	79	923	28	141	59	95	32	72	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.92	1.00		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1900	1870	1900	1900	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	111	1051	91	79	923	28	141	59	95	32	72	76
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	1	0	0	2	0	0	0	0	0	2	0
Cap, veh/h	115	1083	867	90	1009	31	155	126	204	41	110	116
Arrive On Green	0.06	0.57	0.57	0.05	0.56	0.56	0.09	0.20	0.20	0.02	0.14	0.14
Sat Flow, veh/h	1781	1885	1509	1810	1802	55	1810	621	1000	1810	781	824
Grp Volume(v), veh/h	111	1051	91	79	0	951	141	0	154	32	0	148
Grp Sat Flow(s),veh/h/ln	1781	1885	1509	1810	0	1856	1810	0	1621	1810	0	1605
Q Serve(g_s), s	8.7	75.1	3.8	6.1	0.0	64.7	10.8	0.0	11.7	2.5	0.0	12.2
Cycle Q Clear(g_c), s	8.7	75.1	3.8	6.1	0.0	64.7	10.8	0.0	11.7	2.5	0.0	12.2
Prop In Lane	1.00		1.00	1.00		0.03	1.00		0.62	1.00		0.51
Lane Grp Cap(c), veh/h	115	1083	867	90	0	1040	155	0	330	41	0	225
V/C Ratio(X)	0.97	0.97	0.10	0.87	0.00	0.91	0.91	0.00	0.47	0.78	0.00	0.66
Avail Cap(c_a), veh/h	115	1104	884	90	0	1061	155	0	336	78	0	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.00	0.52	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.4	28.7	13.5	66.1	0.0	27.8	63.5	0.0	49.1	68.1	0.0	57.0
Incr Delay (d2), s/veh	73.8	20.1	0.1	34.2	0.0	8.0	46.5	0.0	1.0	26.3	0.0	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	38.5	1.3	3.7	0.0	30.0	7.0	0.0	4.9	1.4	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.2	48.8	13.5	100.2	0.0	35.8	110.0	0.0	50.1	94.4	0.0	61.6
LnGrp LOS	F	D	B	F	A	D	F	A	D	F	A	E
Approach Vol, veh/h	1253					1030		295		180		
Approach Delay, s/veh	54.2					40.7		78.7		67.4		
Approach LOS	D					D		E		E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	84.4	7.2	32.5	13.0	82.4	16.0	23.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	82.0	6.0	29.0	9.0	80.0	12.0	23.0					
Max Q Clear Time (g_c+1/3), s	77.1	4.5	13.7	10.7	66.7	12.8	14.2					
Green Ext Time (p_c), s	0.0	3.3	0.0	0.7	0.0	6.2	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			52.7									
HCM 6th LOS			D									

CUPP_PM (IMP)
23: Ocean St & Soquel Ave

CUPP_PM (IMP)
Timing Plan: PM

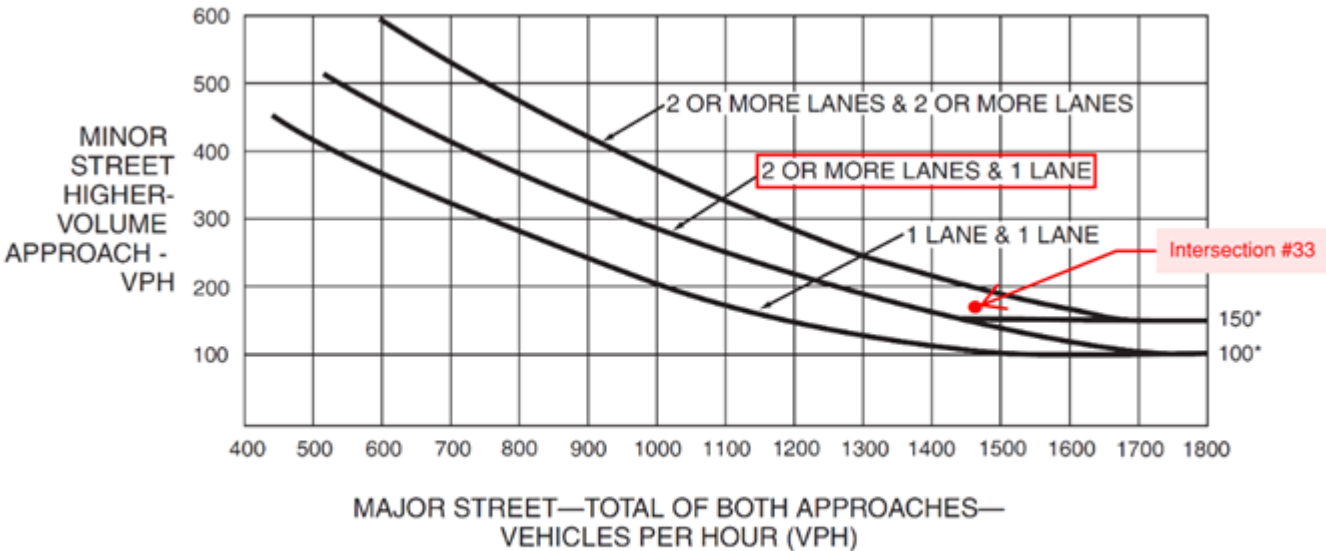


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	645	129	249	442	83	318	832	421	468	512	274
Future Volume (veh/h)	273	645	129	249	442	83	318	832	421	468	512	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1900	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	273	645	129	249	442	83	318	832	421	468	512	274
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0	1	1	1
Cap, veh/h	233	708	141	235	860	737	350	860	586	413	990	633
Arrive On Green	0.13	0.24	0.24	0.13	0.24	0.24	0.19	0.24	0.24	0.23	0.28	0.28
Sat Flow, veh/h	1795	2949	589	1810	3582	1539	1810	3582	1570	1795	3582	1540
Grp Volume(v), veh/h	273	391	383	249	442	83	318	832	421	468	512	274
Grp Sat Flow(s),veh/h/ln	1795	1791	1747	1810	1791	1539	1810	1791	1570	1795	1791	1540
Q Serve(g_s), s	13.0	21.2	21.3	13.0	10.7	3.0	17.2	23.0	23.1	23.0	12.1	12.9
Cycle Q Clear(g_c), s	13.0	21.2	21.3	13.0	10.7	3.0	17.2	23.0	23.1	23.0	12.1	12.9
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	430	419	235	860	737	350	860	586	413	990	633
V/C Ratio(X)	1.17	0.91	0.91	1.06	0.51	0.11	0.91	0.97	0.72	1.13	0.52	0.43
Avail Cap(c_a), veh/h	233	430	419	235	860	737	398	860	586	413	990	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.31	0.31	0.31	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	37.0	37.0	43.5	32.9	14.8	39.5	37.6	27.1	38.5	30.5	21.4
Incr Delay (d2), s/veh	100.2	17.5	18.2	49.3	0.7	0.1	17.9	20.7	6.0	85.9	1.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	11.2	11.0	9.0	4.7	1.1	9.3	12.3	9.4	19.8	5.4	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.7	54.4	55.2	92.8	33.6	14.9	57.3	58.3	33.1	124.4	32.5	23.6
LnGrp LOS	F	D	E	F	C	B	E	E	C	F	C	C
Approach Vol, veh/h	1047				774		1571				1254	
Approach Delay, s/veh	78.0				50.6		51.4				64.8	
Approach LOS	E				D		D				E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.0	28.0	27.0	28.0	17.0	28.0	23.4	31.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	3.0	24.0	23.0	24.0	13.0	24.0	22.0	25.0				
Max Q Clear Time (g_c+I1), s	11.5	23.3	25.0	25.1	15.0	12.7	19.2	14.9				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	2.4	0.2	3.2				

Intersection Summary

HCM 6th Ctrl Delay	60.9											
HCM 6th LOS	E											

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	166	745	70	45	606
Future Vol, veh/h	0	166	745	70	45	606
Conflicting Peds, #/hr	7	1	0	43	43	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	0	0	4
Mvmt Flow	0	166	745	70	45	606
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	824	0	0	858	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	0	371	-	-	791	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	357	-	-	763	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	23.6	0		0.7		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	357	763	-	
HCM Lane V/C Ratio	-	-	0.465	0.059	-	
HCM Control Delay (s)	-	-	23.6	10	0	
HCM Lane LOS	-	-	C	B	A	
HCM 95th %tile Q(veh)	-	-	2.4	0.2	-	



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Appendix K

*Analysis Worksheets for Cumulative (2030) Plus
Project Conditions Queueing Report*

SITE LAYOUT

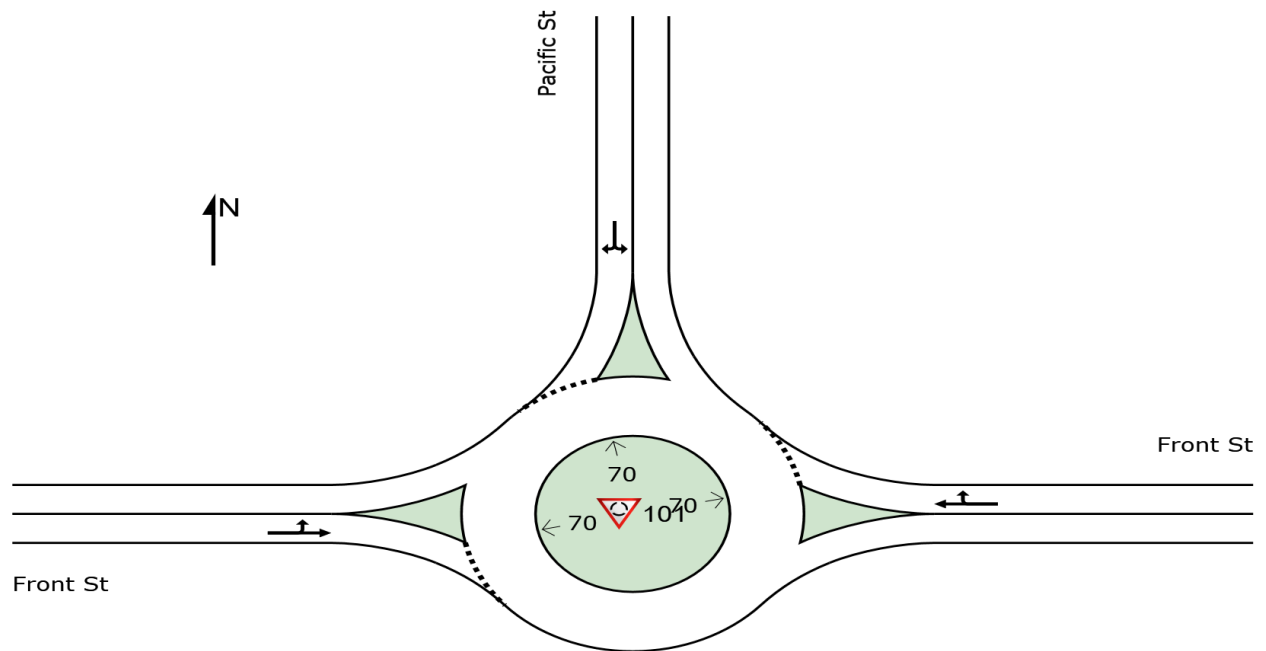
 **Site: 101 [INT #1 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]**

New Site

Site Category: (None)

Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 **Site: 101 [INT #1 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	192	3.0	192	3.0	1197	0.160	100	4.3	LOS A	0.7	19.2	Full	1600	0.0	0.0
Approach	192	3.0	192	3.0		0.160		4.3	LOS A	0.7	19.2				
North: Pacific St															
Lane 1 ^d	79	3.0	79	3.0	1104	0.072	100	3.9	LOS A	0.3	7.7	Full	1600	0.0	0.0
Approach	79	3.0	79	3.0		0.072		3.9	LOS A	0.3	7.7				
West: Front St															
Lane 1 ^d	712	3.0	712	3.0	1294	0.551	100	7.9	LOS A	4.8	122.0	Full	1600	0.0	0.0
Approach	712	3.0	712	3.0		0.551		7.9	LOS A	4.8	122.0				
All Vehicles	983	3.0	983	3.0		0.551		6.9	LOS A	4.8	122.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

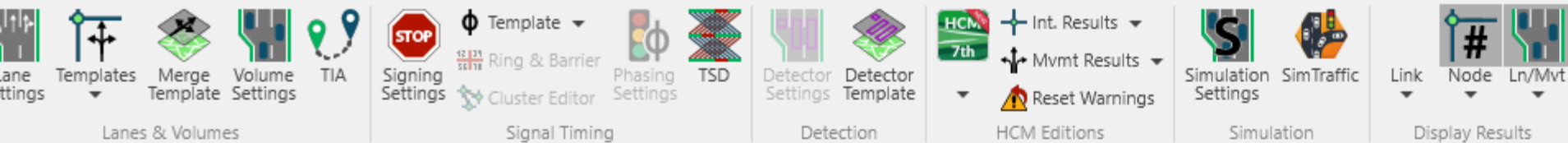
Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	181	10	192	3.0	1197	0.160	100	NA	NA	
Approach	181	10	192	3.0		0.160				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	34	45	79	3.0	1104	0.072	100	NA	NA	
Approach	34	45	79	3.0		0.072				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From W To Exit:	N	E			Cap. veh/h	v/c	%	%		

Lane 1	106	606	712	3.0	1294	0.551	100	NA	NA
Approach	106	606	712	3.0		0.551			
Total %HV Deg.Satn (v/c)									
All Vehicles	983	3.0		0.551					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0



2 Pacific St & Spruce St

 HCM 2000 Signing Settings						
	EBL	EBR	NBL	NBT	SBT	SBR
Lanes and Sharing (#RL)						
Traffic Volume (vph)	9	20	10	200	169	7
Future Volume (vph)	9	20	10	200	169	7
Sign Control	Stop	—	—	Free	Free	—
Median Width (ft)	12	—	—	12	12	—
TWLT Median		—	—			—
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	6.4	6.2	4.1	—	—	—
Follow Up Time, tF (s)	3.5	3.3	2.2	—	—	—
Volume to Capacity Ratio	0.04	0.04	0.01	0.01	0.1	0.1
Control Delay (s)	10.6	10.6	0.1	0.4	0.0	0.0
Level of Service	B	B	A	A	A	A
Queue Length 95th (ft)	3	3	1	1	0	0
Approach Delay (s)	10.6	—	—	0.4	0.0	—

STOP HCM 2000 Signing Settings	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lanes and Sharing (#RL)												
Traffic Volume (vph)	68	1266	26	0	961	94	0	0	14	0	0	116
Future Volume (vph)	68	1266	26	0	961	94	0	0	14	0	0	116
Sign Control	—	Free	—	—	Free	—	—	Stop	—	—	Stop	—
Median Width (ft)	—	12	—	—	12	—	—	0	—	—	0	—
TWLTL Median	—		—	—	✓	—	—		—	—		—
Right Turn Channelized	—	—	None	—	—	None	—	—	None	—	—	None
Critical Gap, tC (s)	4.1	—	—	—	—	—	—	—	6.2	—	—	6.2
Follow Up Time, tF (s)	2.2	—	—	—	—	—	—	—	3.3	—	—	3.3
Volume to Capacity Ratio	0.15	0.76	0.76	—	0.62	0.62	—	—	0.14	—	—	0.45
Control Delay (s)	14.4	0.0	0.0	—	0.0	0.0	—	—	45.2	—	—	29.5
Level of Service	B	A	A	—	A	A	—	—	E	—	—	D
Queue Length 95th (ft)	13	0	0	—	0	0	—	—	11	—	—	54
Approach Delay (s)	—	0.7	—	—	0.0	—	—	45.2	—	—	29.5	—



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	162	1193	83	1031	91	81	156	97	122
v/c Ratio	0.75	0.97	0.59	0.87	0.09	0.75	0.59	0.86	0.60
Control Delay (s/veh)	72.8	40.2	70.5	29.7	3.9	85.1	48.4	101.6	43.3
Queue Delay	0.0	33.3	0.0	48.3	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.8	73.5	70.5	78.0	3.9	85.1	48.4	101.6	43.3
Queue Length 50th (ft)	120	820	63	658	6	61	96	74	59
Queue Length 95th (ft)	#258	#1274	#141	#1026	29	112	156	#137	117
Internal Link Dist (ft)		354		225			212		206
Turn Bay Length (ft)	100		50			50			
Base Capacity (vph)	216	1230	142	1183	958	157	371	163	274
Starvation Cap Reductn	0	126	0	353	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	1.08	0.58	1.24	0.09	0.52	0.42	0.60	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	175	1078	317	864	195	26	258	330	202	410	275
v/c Ratio	0.75	0.83	0.83	1.02	0.25	0.25	0.77	0.85	0.86	0.76	0.50
Control Delay (s/veh)	79.2	47.1	71.1	74.6	13.7	69.5	70.2	53.3	91.0	56.2	25.3
Queue Delay	0.0	49.9	0.0	9.8	0.0	0.0	0.0	7.8	10.5	0.0	0.0
Total Delay (s/veh)	79.2	97.0	71.1	84.4	13.7	69.5	70.2	61.1	101.5	56.2	25.3
Queue Length 50th (ft)	154	474	267	~891	44	23	227	187	180	355	117
Queue Length 95th (ft)	#331	567	m#511	#1150	m90	56	309	291	#304	452	195
Internal Link Dist (ft)		225		487			220			149	
Turn Bay Length (ft)	100		300			100		50	100		100
Base Capacity (vph)	232	1306	381	848	783	103	427	462	256	589	586
Starvation Cap Reductn	0	545	0	24	0	0	0	0	0	0	0
Spillback Cap Reductn	0	60	0	0	0	0	0	95	35	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	1.42	0.83	1.05	0.25	0.25	0.60	0.90	0.91	0.70	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



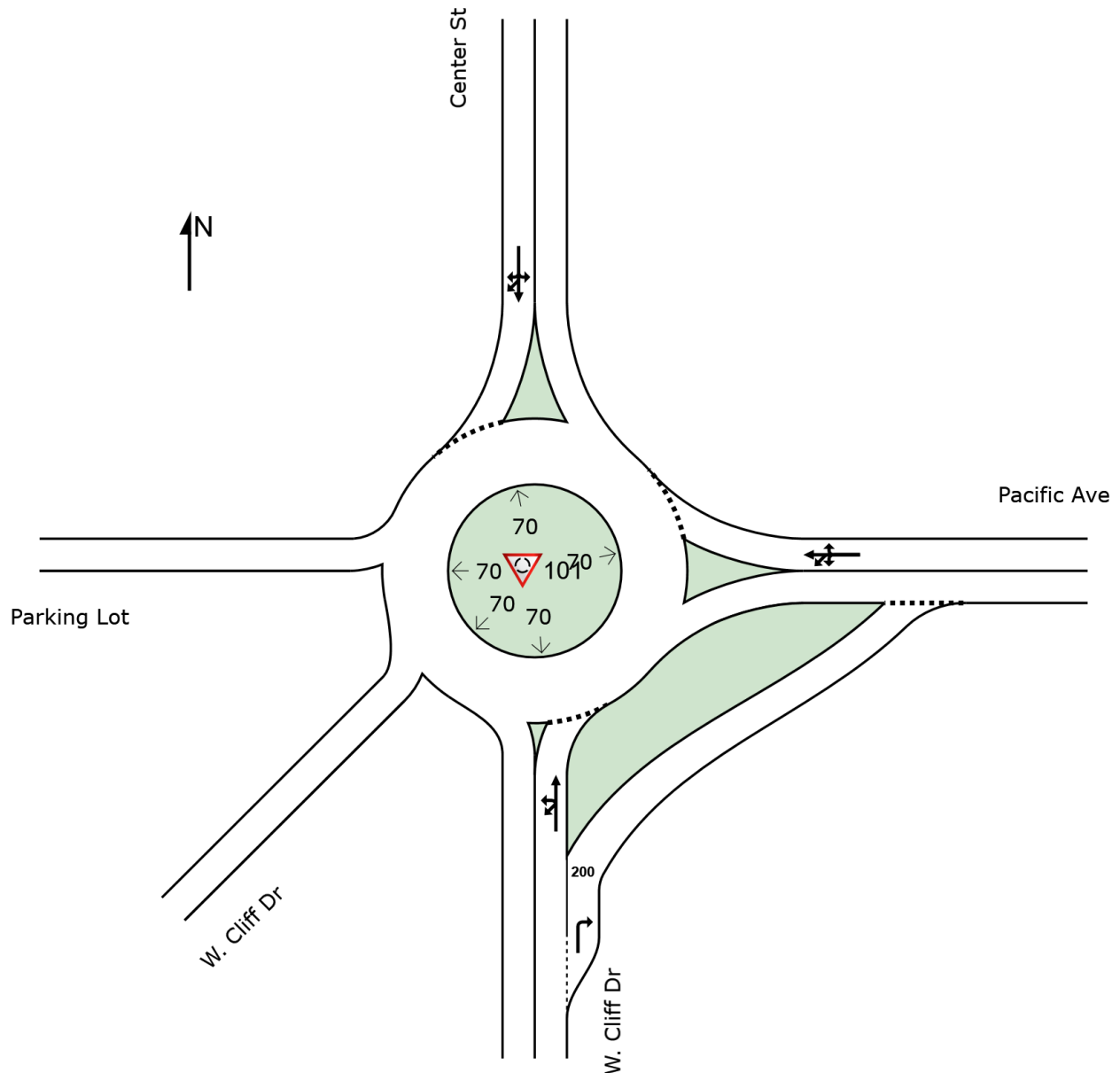
HCM 2000 Signing Settings	 WBL	 WBR	 NBT	 NBR	 SBL	 SBT
Lanes and Sharing (#RL)						
Traffic Volume (vph)	15	56	577	32	127	551
Future Volume (vph)	15	56	577	32	127	551
Sign Control	Stop	—	Free	—	—	Free
Median Width (ft)	12	—	0	—	—	0
TWLTL Median		—		—	—	
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	6.4	6.2	—	—	4.1	—
Follow Up Time, tF (s)	3.5	3.3	—	—	2.2	—
Volume to Capacity Ratio	0.24	0.24	0.36	0.36	0.13	0.13
Control Delay (s)	21.3	21.3	0.0	0.0	1.8	3.2
Level of Service	C	C	A	A	A	A
Queue Length 95th (ft)	23	23	0	0	11	11
Approach Delay (s)	21.3	—	0.0	—	—	3.2

SITE LAYOUT

 Site: 101 [INT #9 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: K:\SJC_TPTO\City of Santa Cruz\097322009 - Santa Cruz Arena and Res Devel LTA\05 Design & Analysis\Sidra\Santa Cruz Arena and Res Devel LTA Roundabouts.sip9

LANE SUMMARY

 Site: 101 [INT #9 CU+P_PM (Site Folder: Cumulative Plus Project Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance																
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.	
	[Total veh/h	HV] %	[Total veh/h	HV] %		veh/h	v/c			%	sec					[Veh
South: W. Cliff Dr																
Lane 1 ^d	199	3.0	199	3.0	1332	0.149	100	3.8	LOS A	0.7	16.6	Full	1600	0.0	0.0	
Lane 2	581	3.0	581	3.0	1292	0.450	100	6.7	LOS A	3.2	82.4		Short	200	0.0	NA
Approach	780	3.0	780	3.0		0.450		6.0	LOS A	3.2	82.4					
East: Pacific Ave																
Lane 1 ^d	713	3.0	713	3.0	1083	0.658	100	12.4	LOS B	8.0	204.3	Full	1600	0.0	0.0	
Approach	713	3.0	713	3.0		0.658		12.4	LOS B	8.0	204.3					
North: Center St																
Lane 1 ^d	438	3.0	438	3.0	647	0.677	100	19.5	LOS C	5.6	144.4	Full	1600	0.0	0.0	
Approach	438	3.0	438	3.0		0.677		19.5	LOS C	5.6	144.4					
All Vehicles	1931	3.0	1931	3.0		0.677		11.4	LOS B	8.0	204.3					

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

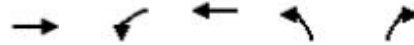
Approach Lane Flows (veh/h)											
South: W. Cliff Dr											
Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	5	175	-	199	3.0	1332	0.149	100	NA	NA
Lane 2	-	-	-	581	581	3.0	1292	0.450	100	0.0	1
Approach	19	5	175	581	780	3.0	0.450				
East: Pacific Ave											
Mov. From E To Exit:	L2 S	L1 SW	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	462	182	5	63	713	3.0	1083	0.658	100	NA	NA
Approach	462	182	5	63	713	3.0	0.658				
North: Center St											

Mov. From N To Exit:	L2	T1	R1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	172	225	5	438	3.0	647	0.677	100	NA	NA
Approach	36	172	225	5	438	3.0		0.677			
Total %HV Deg.Satn (v/c)											
All Vehicles	1931	3.0		0.677							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h		Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	907	430	691	98	626
v/c Ratio	1.07	0.47	0.24	0.40	0.83
Control Delay (s/veh)	101.2	5.0	0.6	62.4	14.5
Queue Delay	0.0	0.9	0.9	0.0	10.1
Total Delay (s/veh)	101.2	5.9	1.5	62.4	24.6
Queue Length 50th (ft)	~494	33	10	86	0
Queue Length 95th (ft)	#632	m69	m8	146	143
Internal Link Dist (ft)	513		171	89	
Turn Bay Length (ft)		75			
Base Capacity (vph)	851	921	2883	246	756
Starvation Cap Reductn	0	246	1835	0	0
Spillback Cap Reductn	0	0	0	0	110
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.07	0.64	0.66	0.40	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

11: Front St/Pacific Ave & Mission St/Water St

Timing Plan: PM



Lane Group	EBL	EBT	WBL	WBT	SBT	SBR
Lane Group Flow (vph)	264	1302	166	932	446	222
v/c Ratio	0.39	0.69	0.34	0.87	1.16	0.51
Control Delay (s/veh)	10.7	10.5	58.8	57.7	148.3	17.5
Queue Delay	1.5	3.5	0.0	4.7	0.0	0.0
Total Delay (s/veh)	12.3	14.1	58.8	62.3	148.3	17.5
Queue Length 50th (ft)	54	158	74	438	~498	40
Queue Length 95th (ft)	m53	m141	112	527	#715	124
Internal Link Dist (ft)		171		478	145	
Turn Bay Length (ft)	75		180			
Base Capacity (vph)	677	1900	483	1070	383	439
Starvation Cap Reductn	252	491	0	90	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.92	0.34	0.95	1.16	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	82	1170	62	233	964	346	111	392	272	312	484
v/c Ratio	0.63	0.95	0.10	1.03	0.65	0.41	0.81	0.63	0.65	0.98	0.94
Control Delay (s/veh)	62.2	46.0	0.3	108.7	24.2	3.8	81.4	39.7	20.1	83.4	61.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.2	46.0	0.3	108.7	24.2	3.8	81.4	39.7	20.1	83.4	61.0
Queue Length 50th (ft)	46	337	0	~148	236	0	63	109	45	178	263
Queue Length 95th (ft)	#106	#476	0	#291	306	52	#155	157	128	#341	#455
Internal Link Dist (ft)		478			445			199			237
Turn Bay Length (ft)	100		100	250			70		100	150	
Base Capacity (vph)	138	1231	602	227	1494	840	138	635	425	320	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.95	0.10	1.03	0.65	0.41	0.80	0.62	0.64	0.98	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	518	1579	162	168	1011	339	203	1384	103	522	1473	431
v/c Ratio	1.00	1.21	0.27	1.31	0.99	0.66	1.33	1.15	0.17	1.32	1.13	0.64
Control Delay (s/veh)	97.4	142.4	18.7	233.7	75.4	35.5	232.2	121.0	6.8	206.6	110.4	23.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	97.4	142.4	18.7	233.7	75.4	35.5	232.2	121.0	6.8	206.6	110.4	23.7
Queue Length 50th (ft)	246	~923	56	~196	484	182	~239	~780	1	~315	~817	174
Queue Length 95th (ft)	#367	#1062	114	#347	#634	297	#403	#920	43	#432	#957	297
Internal Link Dist (ft)		321			262			189			329	
Turn Bay Length (ft)	200		100	200		100	150		80	200		200
Base Capacity (vph)	520	1301	596	128	1021	514	153	1199	597	396	1301	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	1.21	0.27	1.31	0.99	0.66	1.33	1.15	0.17	1.32	1.13	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	94	53	39	40	1578	56	59	1778	11
v/c Ratio	0.51	0.50	0.19	0.30	0.60	0.05	0.34	0.64	0.01
Control Delay (s/veh)	26.2	54.0	6.9	44.9	9.5	1.9	43.0	8.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.2	54.0	6.9	44.9	9.5	1.9	43.0	8.8	0.0
Queue Length 50th (ft)	18	29	0	22	230	0	32	264	0
Queue Length 95th (ft)	63	64	17	52	384	13	68	444	0
Internal Link Dist (ft)	274	331			133			182	
Turn Bay Length (ft)			50	100		60	100		60
Base Capacity (vph)	429	312	475	132	2620	1115	172	2758	1138
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.17	0.08	0.30	0.60	0.05	0.34	0.64	0.01
Intersection Summary									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	279	495	127	152	405	692	186	1385
v/c Ratio	0.78	0.77	0.88	0.37	0.92	0.44	0.61	1.07
Control Delay (s/veh)	42.9	15.1	80.5	19.9	56.4	15.3	35.4	71.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.9	15.1	80.5	19.9	56.4	15.3	35.4	71.1
Queue Length 50th (ft)	112	34	52	41	171	107	74	~357
Queue Length 95th (ft)	#220	#173	#145	88	#331	158	131	#485
Internal Link Dist (ft)	304			285		255		136
Turn Bay Length (ft)		120	80		120		120	
Base Capacity (vph)	383	664	155	442	441	1574	367	1290
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.75	0.82	0.34	0.92	0.44	0.51	1.07

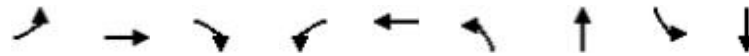
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	2304	487	90	1970	412	279	33	308
v/c Ratio	0.53	1.21	0.58	0.95	1.00	1.50	0.61	0.34	1.24
Control Delay (s/veh)	89.4	133.7	18.4	147.6	54.3	283.8	55.5	78.7	189.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	89.4	133.7	18.4	147.6	54.3	283.8	55.5	78.7	189.1
Queue Length 50th (ft)	50	~1446	215	90	~1085	~556	242	32	~373
Queue Length 95th (ft)	#101	#1573	328	#206	#1220	#771	347	70	#570
Internal Link Dist (ft)		268			243		95		97
Turn Bay Length (ft)	150		150	200		50		50	
Base Capacity (vph)	96	1897	845	95	1963	275	461	96	248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.21	0.58	0.95	1.00	1.50	0.61	0.34	1.24

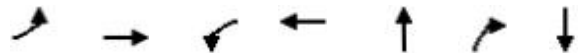
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

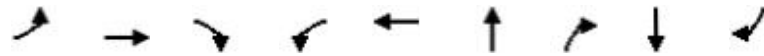
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	918	176	821	259	335	221
v/c Ratio	0.09	0.94	0.81	0.66	0.79	0.70	0.67
Control Delay (s/veh)	41.3	39.0	66.0	13.1	50.4	19.6	41.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.3	39.0	66.0	13.1	50.4	19.6	41.0
Queue Length 50th (ft)	6	449	97	214	136	52	108
Queue Length 95th (ft)	23	#761	#211	513	#235	147	184
Internal Link Dist (ft)		89		101	254		210
Turn Bay Length (ft)	50		50			100	
Base Capacity (vph)	119	1029	229	1250	403	537	400
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.89	0.77	0.66	0.64	0.62	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	111	1051	91	79	951	200	95	104	76
v/c Ratio	0.66	0.92	0.10	0.52	0.90	0.77	0.26	0.33	0.21
Control Delay (s/veh)	60.3	33.4	4.7	47.4	23.9	52.4	11.1	32.3	8.2
Queue Delay	0.0	10.4	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.3	43.8	4.7	47.4	24.6	52.4	11.1	32.3	8.2
Queue Length 50th (ft)	60	546	7	47	206	107	8	51	0
Queue Length 95th (ft)	#156	#893	30	m63	#765	174	45	91	33
Internal Link Dist (ft)		496			528	307		292	
Turn Bay Length (ft)	100		100	100			50		50
Base Capacity (vph)	168	1142	897	151	1059	334	445	401	441
Starvation Cap Reductn	0	0	0	0	18	0	0	0	0
Spillback Cap Reductn	0	91	0	0	0	0	3	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	1.00	0.10	0.52	0.91	0.60	0.21	0.26	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	1105	66	934	70	161	133	134
v/c Ratio	0.36	1.00	0.79	0.83	0.27	0.39	0.53	0.32
Control Delay (s/veh)	50.6	32.3	96.9	22.6	32.3	26.8	39.5	24.6
Queue Delay	0.0	1.4	0.0	1.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.6	33.7	96.9	24.0	32.3	26.8	39.5	24.6
Queue Length 50th (ft)	19	~185	38	419	33	62	67	48
Queue Length 95th (ft)	m23	m#788	#112	#711	71	120	127	99
Internal Link Dist (ft)		528		218		221		258
Turn Bay Length (ft)	60		60		60		60	
Base Capacity (vph)	84	1103	84	1132	260	418	251	418
Starvation Cap Reductn	0	6	0	9	0	0	0	0
Spillback Cap Reductn	0	0	0	72	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	1.01	0.79	0.88	0.27	0.39	0.53	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



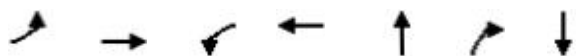
Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	519	33	945	557	797
v/c Ratio	0.86	0.06	0.95	0.68	0.42
Control Delay (s/veh)	37.0	11.5	35.3	17.2	11.3
Queue Delay	15.7	0.0	0.0	0.0	0.1
Total Delay (s/veh)	52.7	11.5	35.3	17.2	11.4
Queue Length 50th (ft)	195	6	605	258	107
Queue Length 95th (ft)	#346	23	#871	m373	152
Internal Link Dist (ft)	286		487		425
Turn Bay Length (ft)		25			
Base Capacity (vph)	663	575	997	814	1895
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	137	0	0	0	207
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.06	0.95	0.68	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

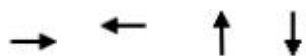
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	277	595	102	579	521	89	1073
v/c Ratio	0.89	0.72	0.66	0.94	0.40	0.14	0.87
Control Delay (s/veh)	66.9	26.6	60.9	54.5	23.2	3.5	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.9	26.6	60.9	54.5	23.2	3.5	33.5
Queue Length 50th (ft)	155	271	57	305	117	0	272
Queue Length 95th (ft)	#292	404	#126	#512	163	23	#401
Internal Link Dist (ft)		333		200	297		410
Turn Bay Length (ft)	200		100			100	
Base Capacity (vph)	320	827	160	630	1293	616	1234
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.72	0.64	0.92	0.40	0.14	0.87

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	990	736	138	103
v/c Ratio	0.74	0.56	0.19	0.14
Control Delay (s/veh)	18.3	11.6	8.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.3	11.6	8.2	4.8
Queue Length 50th (ft)	139	124	19	6
Queue Length 95th (ft)	202	175	47	27
Internal Link Dist (ft)	343	702	430	214
Turn Bay Length (ft)				
Base Capacity (vph)	1335	1309	710	719
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.56	0.19	0.14
Intersection Summary				



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	273	774	249	442	83	318	832	421	468	512	274
v/c Ratio	1.05	0.93	1.09	0.57	0.21	0.82	1.02	0.83	0.99	0.52	0.48
Control Delay (s/veh)	101.5	68.6	130.4	41.7	8.0	57.9	80.3	35.6	81.3	37.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	101.5	68.6	130.4	41.7	8.0	57.9	80.3	35.6	81.3	37.2	12.7
Queue Length 50th (ft)	~216	303	~198	147	0	215	~330	152	330	161	34
Queue Length 95th (ft)	m#365	#407	#357	201	37	292	#454	#320	#544	236	121
Internal Link Dist (ft)		702		1142			410			331	
Turn Bay Length (ft)	100		25		25	100		100	200		100
Base Capacity (vph)	259	834	229	779	404	508	812	509	471	986	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.93	1.09	0.57	0.21	0.63	1.02	0.83	0.99	0.52	0.48

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	164	1008	101	691	278	228	117
v/c Ratio	0.37	0.56	0.43	1.01	0.89	0.75	0.28
Control Delay (s/veh)	25.6	14.6	32.7	60.6	55.0	43.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.6	14.6	32.7	60.6	55.0	43.2	7.0
Queue Length 50th (ft)	60	157	41	~292	104	91	0
Queue Length 95th (ft)	112	241	79	#516	#231	#185	37
Internal Link Dist (ft)		1142		281	281	272	
Turn Bay Length (ft)	150		150				
Base Capacity (vph)	442	1791	412	687	336	325	438
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.56	0.25	1.01	0.83	0.70	0.27

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	32	1253	179	679	262	223	218	70
v/c Ratio	0.44	0.94	0.92	0.75	0.85	0.54	0.70	0.18
Control Delay (s/veh)	66.4	44.7	92.9	28.6	66.4	14.5	52.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.4	44.7	92.9	28.6	66.4	14.5	52.3	1.1
Queue Length 50th (ft)	20	396	115	362	164	21	132	0
Queue Length 95th (ft)	#57	#544	#244	#522	#302	92	#229	0
Internal Link Dist (ft)		253		198	124		191	
Turn Bay Length (ft)	50		100			100		100
Base Capacity (vph)	72	1329	194	901	307	410	312	379
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.94	0.92	0.75	0.85	0.54	0.70	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	561	1760	63	1561	19	157	293	233	110
v/c Ratio	0.89	0.89	0.59	1.06	0.08	0.30	0.93	0.44	0.21
Control Delay (s/veh)	54.7	26.4	72.8	64.3	23.7	24.4	68.8	29.2	5.9
Queue Delay	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.7	32.3	72.8	64.3	23.7	24.4	68.8	29.2	5.9
Queue Length 50th (ft)	162	477	39	~524	8	62	156	105	0
Queue Length 95th (ft)	#255	#665	m#74	#666	25	112	#303	172	36
Internal Link Dist (ft)		286		532		247		280	
Turn Bay Length (ft)			50		50				
Base Capacity (vph)	636	1983	106	1478	270	562	341	570	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	188	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.98	0.59	1.06	0.07	0.28	0.86	0.41	0.20

Intersection Summary

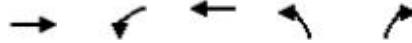
~ Volume exceeds capacity, queue is theoretically infinite.

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95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1875	226	1452	146	433
v/c Ratio	1.03	0.94	0.60	0.36	0.67
Control Delay (s/veh)	42.3	71.9	12.7	32.7	28.0
Queue Delay	2.5	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.8	71.9	12.7	32.7	28.0
Queue Length 50th (ft)	~272	134	292	71	194
Queue Length 95th (ft)	#731	m#246	350	126	302
Internal Link Dist (ft)	532		799	185	
Turn Bay Length (ft)		100			100
Base Capacity (vph)	1812	240	2437	401	644
Starvation Cap Reductn	12	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.04	0.94	0.60	0.36	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	77	2164	22	1554	125	183
v/c Ratio	0.48	0.88	0.22	0.71	0.56	0.61
Control Delay (s/veh)	41.3	10.2	43.6	8.6	39.7	33.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.3	10.2	43.6	8.6	39.7	33.8
Queue Length 50th (ft)	44	230	13	132	56	68
Queue Length 95th (ft)	m49	m245	m22	152	115	139
Internal Link Dist (ft)		799		802	301	228
Turn Bay Length (ft)	100		100			
Base Capacity (vph)	180	2466	100	2191	222	299
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.88	0.22	0.71	0.56	0.61

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	39	2196	12	1464	97	205
v/c Ratio	0.35	0.86	0.12	0.62	0.39	0.83
Control Delay (s/veh)	39.1	13.9	43.3	10.8	31.1	58.5
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay (s/veh)	39.1	13.9	43.3	11.0	31.1	58.5
Queue Length 50th (ft)	23	294	7	263	39	97
Queue Length 95th (ft)	m28	#814	24	337	85	#207
Internal Link Dist (ft)		802		562	308	268
Turn Bay Length (ft)	100		150			
Base Capacity (vph)	120	2546	100	2378	276	272
Starvation Cap Reductn	0	0	0	219	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.86	0.12	0.68	0.35	0.75

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	20	935	1153	79	718	364	366	77	72	28
v/c Ratio	0.30	0.54	1.08	0.84	0.39	0.75	0.75	0.16	0.55	0.16
Control Delay (s/veh)	75.3	26.1	69.4	120.1	20.7	55.5	55.5	9.8	75.1	1.8
Queue Delay	0.0	0.5	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.3	26.6	77.9	120.1	20.7	55.5	55.5	9.8	75.1	1.8
Queue Length 50th (ft)	17	302	~847	~71	210	304	305	3	62	0
Queue Length 95th (ft)	46	367	#1113	#183	261	#482	#486	43	112	0
Internal Link Dist (ft)		562			484		648		27	
Turn Bay Length (ft)	100		100	200				100		
Base Capacity (vph)	66	1719	1068	94	1857	483	485	496	299	317
Starvation Cap Reductn	0	361	34	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.69	1.12	0.84	0.39	0.75	0.75	0.16	0.24	0.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

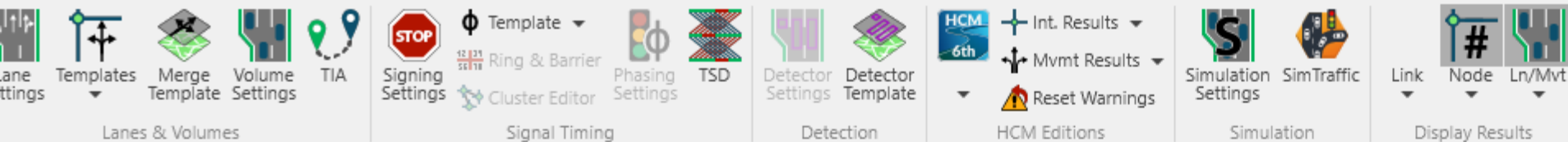
Queue shown is maximum after two cycles.



Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	249	127	51	82	53	848	53	1005
v/c Ratio	2.93	0.17	0.22	0.24	0.30	0.93	0.30	1.16
Control Delay (s/veh)	918.5	2.6	34.6	1.9	38.9	49.0	38.9	113.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	918.5	2.6	34.6	1.9	38.9	49.0	38.9	113.6
Queue Length 50th (ft)	~190	0	24	0	25	~255	25	~353
Queue Length 95th (ft)	#333	23	56	3	60	#372	60	#475
Internal Link Dist (ft)	170		242			295		421
Turn Bay Length (ft)				100	100		150	
Base Capacity (vph)	85	728	230	335	174	909	174	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.93	0.17	0.22	0.24	0.30	0.93	0.30	1.16

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



33 Pacific Ave & 2nd Ave

HCM 2000 Signing Settings	 WBL	 WBR	 NBT	 NBR	 SBL	 SBT
Lanes and Sharing (#RL)						
Traffic Volume (vph)	90	76	745	70	45	606
Future Volume (vph)	90	76	745	70	45	606
Sign Control	Stop	—	Free	—	—	Free
Median Width (ft)	12	—	12	—	—	12
TWLTL Median		—		—	—	
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	6.4	6.2	—	—	4.1	—
Follow Up Time, tF (s)	3.5	3.3	—	—	2.2	—
Volume to Capacity Ratio	0.77	0.21	0.48	0.48	0.06	0.06
Control Delay (s)	99.6	17.8	0.0	0.0	0.9	1.5
Level of Service	F	C	A	A	A	A
Queue Length 95th (ft)	109	20	0	0	5	5
Approach Delay (s)	62.2	—	0.0	—	—	1.5



 HCM 2000 Signing Settings	 WBL	 WBR	 NBT	 NBR	 SBL	 SBT
Lanes and Sharing (#RL)						
Traffic Volume (vph)	60	20	795	0	0	696
Future Volume (vph)	60	20	795	0	0	696
Sign Control	Stop	—	Free	—	—	Free
Median Width (ft)	12	—	0	—	—	0
TWLTL Median		—		—	—	
Right Turn Channelized	—	None	—	None	—	None
Critical Gap, tC (s)	6.8	6.9	—	—	—	—
Follow Up Time, tF (s)	3.5	3.3	—	—	—	—
Volume to Capacity Ratio	0.43	0.43	0.47	—	—	0.2
Control Delay (s)	38.5	38.5	0.0	—	—	0.0
Level of Service	E	E	A	—	—	A
Queue Length 95th (ft)	50	50	0	—	—	0
Approach Delay (s)	38.5	—	0.0	—	—	0.0

Appendix L

General Plan Volume Growth Assessment

General Plan Volume Comparison

INTID	PM 2023	PM 2010 (General Plan)	PM 2030 (General Plan)	Growth between 2023 and 2030
1				
2				
3				
4	1,000	1,664	2,411	20%
5	1,104	1,916	2,836	22%
6	2,007	2,562	3,758	12%
7				
8				
9	1,280	1,042	1,821	6%
10	1,577	1,793	2,740	11%
11	1,706	1,963	3,315	13%
12	2,579	2,728	4,361	10%
13	3,690	5,196	7,777	16%
14	2,352	2,591	3,613	8%
15	2,884	2,762	3,638	4%
16	2,683	3,083	5,825	17%
17	1,285	1,932	2,615	15%
18	1,242	1,771	2,626	16%
19	1,277	1,696	2,469	13%
20	1,435	1,865	2,624	12%
21	2,022	2,259	3,344	9%
22	1,062	1,382	1,880	11%
23	2,380	3,073	4,348	12%
24	1,599	1,800	2,454	8%
25	1,729	2,402	2,785	9%
26	3,226	4,031	4,633	6%
27	2,682	3,182	4,069	7%
28	2,763	3,268	4,062	7%
29	2,771	3,290	3,967	6%
30	2,974	3,149	3,766	4%
31	2,012	2,155	2,407	3%
32				
33				
34				

Appendix M

Laurel Access Control Intersection Level of Service

LANE SUMMARY

 Site: 101 [INT #1 Ex Plus Approved Projects Plus Project_AM
(Site Folder: Existing Plus Approved Plus Project)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	370	3.0	370	3.0	1274	0.290	100	5.2	LOS A	1.6	41.5	Full	1600	0.0	0.0
Approach	370	3.0	370	3.0		0.290		5.2	LOS A	1.6	41.5				
North: Pacific St															
Lane 1 ^d	87	3.0	87	3.0	909	0.096	100	4.8	LOS A	0.4	10.0	Full	1600	0.0	0.0
Approach	87	3.0	87	3.0		0.096		4.8	LOS A	0.4	10.0				
West: Front St															
Lane 1 ^d	402	3.0	402	3.0	1327	0.303	100	4.7	LOS A	1.8	45.2	Full	1600	0.0	0.0
Approach	402	3.0	402	3.0		0.303		4.7	LOS A	1.8	45.2				
All Vehicles	859	3.0	859	3.0		0.303		4.9	LOS A	1.8	45.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	361	9	370	3.0	1274	0.290	100	NA	NA	
Approach	361	9	370	3.0		0.290				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	11	76	87	3.0	909	0.096	100	NA	NA	
Approach	11	76	87	3.0		0.096				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From W To Exit:	N	E			Cap. veh/h	v/c	%	%		

Lane 1	49	353	402	3.0	1327	0.303	100	NA	NA
Approach	49	353	402	3.0		0.303			
Total %HV Deg.Satn (v/c)									
All Vehicles	859	3.0		0.303					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	2	2	108	65	15
Future Vol, veh/h	4	2	2	108	65	15
Conflicting Peds, #/hr	7	9	29	0	0	29
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	6	16	0
Mvmt Flow	5	2	2	126	76	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	251	123	122	0	-	0
Stage 1	114	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	742	933	1478	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	706	904	1442	-	-	-
Mov Cap-2 Maneuver	706	-	-	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	9.8	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1442	-	762	-	-	
HCM Lane V/C Ratio	0.002	-	0.009	-	-	
HCM Control Delay (s/veh)	7.5	0	9.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q (veh)	0	-	0	-	-	

HCM 6th TWSC
4: Cedar St & Laurel St

Ex+AP+P+Laurel Access Control _AM
Timing Plan: AM

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	340	20	0	513	29	0	0	10	0	1	26
Future Vol, veh/h	36	340	20	0	513	29	0	0	10	0	1	26
Conflicting Peds, #/hr	2	0	11	11	0	2	6	0	8	8	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	16	3	0	0	5	0	0	0	0	0	0	4
Mvmt Flow	40	382	22	0	576	33	0	0	11	0	1	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	611	0	0	-	-	0	-	-	412	-	1090	601
Stage 1	-	-	-	-	-	-	-	-	-	-	595	-
Stage 2	-	-	-	-	-	-	-	-	-	-	495	-
Critical Hdwy	4.26	-	-	-	-	-	-	-	6.2	-	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	5.5	-
Follow-up Hdwy	2.344	-	-	-	-	-	-	-	3.3	-	4	3.336
Pot Cap-1 Maneuver	903	-	-	0	-	-	0	0	644	0	217	497
Stage 1	-	-	-	0	-	-	0	0	-	0	496	-
Stage 2	-	-	-	0	-	-	0	0	-	0	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	901	-	-	-	-	-	-	-	634	-	205	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	325	-
Stage 1	-	-	-	-	-	-	-	-	-	-	495	-
Stage 2	-	-	-	-	-	-	-	-	-	-	520	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.8	0	10.8	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	634	901	-	-	-	-	494
HCM Lane V/C Ratio	0.018	0.045	-	-	-	-	0.059
HCM Control Delay (s/veh)	10.8	9.2	-	-	-	-	12.7
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q (veh)	0.1	0.1	-	-	-	-	0.2

HCM 6th Signalized Intersection Summary

Ex+AP+P+Laurel Access Control _AM

5: Pacific Ave & Laurel St

Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	357	25	35	442	23	57	26	52	13	31	5
Future Volume (veh/h)	0	357	25	35	442	23	57	26	52	13	31	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.89		0.84	0.90		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No				No			No	
Adj Sat Flow, veh/h/ln	1737	1856	1900	1900	1856	1337	1841	1707	1781	1900	1559	1441
Adj Flow Rate, veh/h	0	384	27	38	475	25	61	28	56	14	33	5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	11	3	0	0	3	38	4	13	8	0	23	31
Cap, veh/h	2	805	57	99	1062	624	283	86	172	246	248	38
Arrive On Green	0.00	0.47	0.47	0.05	0.57	0.57	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1654	1708	120	1810	1856	1090	1193	450	900	1204	1294	196
Grp Volume(v), veh/h	0	0	411	38	475	25	61	0	84	14	0	38
Grp Sat Flow(s),veh/h/ln	1654	0	1828	1810	1856	1090	1193	0	1350	1204	0	1490
Q Serve(g_s), s	0.0	0.0	13.8	1.8	13.2	0.9	4.0	0.0	4.8	0.9	0.0	1.9
Cycle Q Clear(g_c), s	0.0	0.0	13.8	1.8	13.2	0.9	5.9	0.0	4.8	5.7	0.0	1.9
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.67	1.00		0.13
Lane Grp Cap(c), veh/h	2	0	861	99	1062	624	283	0	258	246	0	285
V/C Ratio(X)	0.00	0.00	0.48	0.39	0.45	0.04	0.22	0.00	0.33	0.06	0.00	0.13
Avail Cap(c_a), veh/h	199	0	861	217	1062	624	373	0	360	336	0	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	16.2	41.1	11.1	8.4	32.7	0.0	31.4	33.9	0.0	30.2
Incr Delay (d2), s/veh	0.0	0.0	1.9	0.8	1.2	0.1	0.4	0.0	0.7	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	5.9	0.8	5.3	0.2	1.2	0.0	1.6	0.3	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	18.1	41.9	12.3	8.5	33.0	0.0	32.1	33.9	0.0	30.4
LnGrp LOS	B D B A C C C C											
Approach Vol, veh/h	411		538				145			52		
Approach Delay, s/veh	18.1		14.2				32.5			31.4		
Approach LOS	B		B				C			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	0.0	56.1	21.2		9.1	47.0	21.2					
Change Period (Y+Rc), s	4.2	4.6	4.0		4.2	4.6	4.0					
Max Green Setting (Gmax), s	10.8	42.4	24.0		10.8	42.4	24.0					
Max Q Clear Time (g_c+l1), s	0.0	15.2	7.7		3.8	15.8	7.9					
Green Ext Time (p_c), s	0.0	3.3	0.1		0.0	2.7	0.6					
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	18.7											
HCM 6th LOS	B											

HCM 6th Signalized Intersection Summary 6: Front St & Laurel St

Ex+AP+P+Laurel Access Control _AM
Timing Plan: AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	324	28	242	385	121	54	165	336	37	164	74
Future Volume (veh/h)	100	324	28	242	385	121	54	165	336	37	164	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1841	1885	1885	1885	1885	1900	1737	1856	1826	1767
Adj Flow Rate, veh/h	110	356	31	266	423	133	59	181	369	41	180	81
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	1	4	1	1	1	1	0	11	3	5	9
Cap, veh/h	148	1090	94	196	664	563	123	510	395	101	469	384
Arrive On Green	0.03	0.11	0.11	0.11	0.35	0.35	0.07	0.27	0.27	0.06	0.26	0.26
Sat Flow, veh/h	1781	3335	289	1795	1885	1598	1795	1900	1472	1767	1826	1497
Grp Volume(v), veh/h	110	190	197	266	423	133	59	181	369	41	180	81
Grp Sat Flow(s),veh/h/ln	1781	1791	1833	1795	1885	1598	1795	1900	1472	1767	1826	1497
Q Serve(g_s), s	5.5	8.8	8.9	9.8	16.9	5.3	2.8	6.9	22.0	2.0	7.3	3.8
Cycle Q Clear(g_c), s	5.5	8.8	8.9	9.8	16.9	5.3	2.8	6.9	22.0	2.0	7.3	3.8
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	585	599	196	664	563	123	510	395	101	469	384
V/C Ratio(X)	0.74	0.33	0.33	1.36	0.64	0.24	0.48	0.36	0.93	0.41	0.38	0.21
Avail Cap(c_a), veh/h	372	585	599	196	664	563	176	515	399	173	495	406
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	31.0	31.0	40.1	24.3	20.6	40.4	26.6	32.2	41.0	27.6	26.3
Incr Delay (d2), s/veh	2.6	1.4	1.4	191.7	4.6	1.0	1.1	0.4	28.9	1.0	0.5	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.3	4.5	14.7	8.1	2.1	1.3	3.1	10.8	0.9	3.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.4	32.4	32.4	231.8	29.0	21.6	41.4	27.1	61.1	41.9	28.1	26.6
LnGrp LOS	D	C	C	F	C	C	D	C	E	D	C	C
Approach Vol, veh/h	497			822			609			302		
Approach Delay, s/veh	35.3			93.4			49.1			29.6		
Approach LOS	D			F			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	36.3	10.4	27.7	14.0	34.0	9.3	28.7				
Change Period (Y+Rc), s	4.2	4.6	4.2	4.6	4.2	4.6	4.2	4.6				
Max Green Setting (Gmax), s	10.8	20.4	8.8	24.4	9.8	29.4	8.8	24.4				
Max Q Clear Time (g_c+I1), s	17.5	18.9	4.8	9.3	11.8	10.9	4.0	24.0				
Green Ext Time (p_c), s	0.1	0.5	0.0	1.1	0.0	2.1	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay, s/veh	59.7
HCM 6th LOS	E

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	131	1	5	131	7	13
Future Vol, veh/h	131	1	5	131	7	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	141	1	5	141	8	14
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	7.9	7.9	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	35%	0%	4%
Vol Thru, %	0%	99%	96%
Vol Right, %	65%	1%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	20	132	136
LT Vol	7	0	5
Through Vol	0	131	131
RT Vol	13	1	0
Lane Flow Rate	22	142	146
Geometry Grp	1	1	1
Degree of Util (X)	0.025	0.16	0.165
Departure Headway (Hd)	4.195	4.059	4.051
Convergence, Y/N	Yes	Yes	Yes
Cap	858	880	882
Service Time	2.195	2.101	2.092
HCM Lane V/C Ratio	0.026	0.161	0.166
HCM Control Delay, s/veh	7.3	7.9	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.6	0.6

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			A
Traffic Vol, veh/h	12	119	337	20	45	332
Future Vol, veh/h	12	119	337	20	45	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	129	366	22	49	361
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	836	377	0	0	388	0
Stage 1	377	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	337	670	-	-	1170	-
Stage 1	694	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	319	670	-	-	1170	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	12.7	0	1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	609	1170	-	
HCM Lane V/C Ratio	-	-	0.234	0.042	-	
HCM Control Delay (s/veh)	-	-	12.7	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q (veh)	-	-	0.9	0.1	-	

LANE SUMMARY

 **Site: 101 [INT #1 Ex Plus Approved Projects Plus Project_PM
(Site Folder: Existing Plus Approved Plus Project)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	456	3.0	456	3.0	1241	0.368	100	6.2	LOS A	2.2	57.5	Full	1600	0.0	0.0
Approach	456	3.0	456	3.0		0.368		6.2	LOS A	2.2	57.5				
North: Pacific St															
Lane 1 ^d	98	3.0	98	3.0	826	0.119	100	5.5	LOS A	0.5	12.3	Full	1600	0.0	0.0
Approach	98	3.0	98	3.0		0.119		5.5	LOS A	0.5	12.3				
West: Front St															
Lane 1 ^d	558	3.0	558	3.0	1306	0.428	100	6.3	LOS A	3.0	76.2	Full	1600	0.0	0.0
Approach	558	3.0	558	3.0		0.428		6.3	LOS A	3.0	76.2				
All Vehicles	1113	3.0	1113	3.0		0.428		6.2	LOS A	3.0	76.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From E					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	W	N								
Lane 1	449	7	456	3.0	1241	0.368	100	NA	NA	
Approach	449	7	456	3.0		0.368				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From N					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	E	W								
Lane 1	26	72	98	3.0	826	0.119	100	NA	NA	
Approach	26	72	98	3.0		0.119				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From W					Cap. veh/h	v/c	%	%	Lane No.	
To Exit:	N	E								

Lane 1	73	485	558	3.0	1306	0.428	100	NA	NA
Approach	73	485	558	3.0		0.428			
Total %HV Deg.Satn (v/c)									
All Vehicles	1113	3.0		0.428					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	4	
Traffic Vol, veh/h	5	12	5	125	110	4
Future Vol, veh/h	5	12	5	125	110	4
Conflicting Peds, #/hr	28	8	52	0	0	52
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	4	7	0
Mvmt Flow	6	14	6	149	131	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	375	194	188	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	630	853	1398	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	574	811	1337	-	-	-
Mov Cap-2 Maneuver	574	-	-	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1337	-	723	-	-
HCM Lane V/C Ratio	0.004	-	0.028	-	-
HCM Control Delay (s/veh)	7.7	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	499	24	0	464	43	0	0	8	0	0	84
Future Vol, veh/h	62	499	24	0	464	43	0	0	8	0	0	84
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	64	514	25	0	478	44	0	0	8	0	0	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	543	0	0	-	-	0	-	-	571	-	-	524
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.2	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.3	-	-	3.3
Pot Cap-1 Maneuver	1011	-	-	0	-	-	0	0	524	0	0	557
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	-	-	-	-	-	505	-	-	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.9	0	12.2	12.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	505	993	-	-	-	-	546
HCM Lane V/C Ratio	0.016	0.064	-	-	-	-	0.159
HCM Control Delay (s/veh)	12.2	8.9	-	-	-	-	12.8
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q (veh)	0.1	0.2	-	-	-	-	0.6

HCM 6th Signalized Intersection Summary

EX+AP+P+Laurel Access Control_PM

5: Pacific Ave & Laurel St

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	474	46	51	455	44	32	64	55	45	49	15
Future Volume (veh/h)	18	474	46	51	455	44	32	64	55	45	49	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.77		0.69	0.83		0.68
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	19	489	47	53	469	45	33	66	57	46	51	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	53	832	80	115	1005	773	265	161	139	221	251	74
Arrive On Green	0.03	0.50	0.50	0.06	0.53	0.53	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1810	1667	160	1810	1885	1450	1044	737	637	1028	1152	339
Grp Volume(v), veh/h	19	0	536	53	469	45	33	0	123	46	0	66
Grp Sat Flow(s),veh/h/ln	1810	0	1828	1810	1885	1450	1044	0	1374	1028	0	1491
Q Serve(g_s), s	1.0	0.0	19.8	2.7	14.7	1.4	2.5	0.0	7.3	3.8	0.0	3.4
Cycle Q Clear(g_c), s	1.0	0.0	19.8	2.7	14.7	1.4	6.0	0.0	7.3	11.1	0.0	3.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.46	1.00		0.23
Lane Grp Cap(c), veh/h	53	0	912	115	1005	773	265	0	299	221	0	325
V/C Ratio(X)	0.36	0.00	0.59	0.46	0.47	0.06	0.12	0.00	0.41	0.21	0.00	0.20
Avail Cap(c_a), veh/h	206	0	912	206	1005	773	302	0	347	256	0	377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.3	0.0	16.9	42.9	13.8	10.7	32.8	0.0	31.9	36.7	0.0	30.4
Incr Delay (d2), s/veh	1.5	0.0	2.8	1.0	1.4	0.1	0.2	0.0	0.9	0.5	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	8.5	1.2	6.3	0.5	0.7	0.0	2.5	1.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.8	0.0	19.6	43.9	15.2	10.8	33.1	0.0	32.8	37.2	0.0	30.7
LnGrp LOS	D		B	D	B	B	C		C	D		C
Approach Vol, veh/h		555			567			156			112	
Approach Delay, s/veh		20.6			17.5			32.9			33.4	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	55.3		24.7	10.2	52.0		24.7				
Change Period (Y+Rc), s	4.2	4.6		4.0	4.2	4.6		4.0				
Max Green Setting (Gmax), s	10.8	47.4		24.0	10.8	47.4		24.0				
Max Q Clear Time (g_c+I1), s	3.0	16.7		13.1	4.7	21.8		9.3				
Green Ext Time (p_c), s	0.0	3.4		0.3	0.0	3.8		0.7				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			21.7									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary 6: Front St & Laurel St

EX+AP+P+Laurel Access Control_PM
Timing Plan: PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↰		↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (veh/h)	140	531	42	232	366	118	42	189	333	73	310	136
Future Volume (veh/h)	140	531	42	232	366	118	42	189	333	73	310	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	144	547	43	239	377	122	43	195	343	75	320	140
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	179	1049	82	206	616	522	103	447	379	131	476	404
Arrive On Green	0.03	0.10	0.10	0.11	0.32	0.32	0.06	0.24	0.24	0.07	0.25	0.25
Sat Flow, veh/h	1810	3391	266	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	144	291	299	239	377	122	43	195	343	75	320	140
Grp Sat Flow(s),veh/h/ln	1810	1805	1852	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	7.5	14.5	14.6	10.8	15.9	5.3	2.2	8.3	19.7	3.8	14.4	6.8
Cycle Q Clear(g_c), s	7.5	14.5	14.6	10.8	15.9	5.3	2.2	8.3	19.7	3.8	14.4	6.8
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	179	559	573	206	616	522	103	447	379	131	476	404
V/C Ratio(X)	0.80	0.52	0.52	1.16	0.61	0.23	0.42	0.44	0.91	0.57	0.67	0.35
Avail Cap(c_a), veh/h	320	559	573	206	616	522	168	488	414	244	568	481
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	36.0	36.0	42.1	27.1	23.5	43.3	30.9	35.3	42.6	32.1	29.2
Incr Delay (d2), s/veh	2.9	3.1	3.1	113.2	4.5	1.0	1.0	0.7	21.9	1.5	2.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	7.5	7.7	11.2	7.8	2.1	1.0	3.8	9.8	1.7	6.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	48.0	39.1	39.1	155.3	31.6	24.5	44.2	31.6	57.2	44.1	34.5	29.7
LnGrp LOS	D	D	D	F	C	C	D	C	E	D	C	C
Approach Vol, veh/h	734				738		581				535	
Approach Delay, s/veh	40.8				70.5		47.7				34.6	
Approach LOS	D				E		D				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	35.4	9.6	28.4	15.0	34.0	11.1	27.0				
Change Period (Y+Rc), s	4.2	4.6	4.2	4.6	4.2	4.6	4.2	4.6				
Max Green Setting (Gmax), s	16.8	23.4	8.8	28.4	10.8	29.4	12.8	24.4				
Max Q Clear Time (g_c+I), s	19.5	17.9	4.2	16.4	12.8	16.6	5.8	21.7				
Green Ext Time (p_c), s	0.1	1.3	0.0	1.9	0.0	2.9	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 49.5
HCM 6th LOS D

Intersection

Intersection Delay, s/veh 8.1

Intersection LOS A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	164	2	14	147	10	11
Future Vol, veh/h	164	2	14	147	10	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	173	2	15	155	11	12
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.1	8.1	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	48%	0%	9%
Vol Thru, %	0%	99%	91%
Vol Right, %	52%	1%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	21	166	161
LT Vol	10	0	14
Through Vol	0	164	147
RT Vol	11	2	0
Lane Flow Rate	22	175	169
Geometry Grp	1	1	1
Degree of Util (X)	0.027	0.198	0.192
Departure Headway (Hd)	4.415	4.076	4.087
Convergence, Y/N	Yes	Yes	Yes
Cap	816	875	873
Service Time	2.415	2.125	2.138
HCM Lane V/C Ratio	0.027	0.2	0.194
HCM Control Delay, s/veh	7.5	8.1	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.7	0.7

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			A
Traffic Vol, veh/h	9	76	440	35	86	459
Future Vol, veh/h	9	76	440	35	86	459
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	83	478	38	93	499
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1182	497	0	0	516	0
Stage 1	497	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	210	573	-	-	1050	-
Stage 1	611	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	184	573	-	-	1050	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	14.6	0		1.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	468	1050	-	
HCM Lane V/C Ratio	-	-	0.197	0.089	-	
HCM Control Delay (s/veh)	-	-	14.6	8.8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q (veh)	-	-	0.7	0.3	-	

LANE SUMMARY

 **Site: 101 [INT #1 CU+P_PM (Site Folder: Cumulative Plus Project Plus Laurel Access Control Conditions)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: Front St															
Lane 1 ^d	192	3.0	192	3.0	1197	0.160	100	4.3	LOS A	0.7	19.2	Full	1600	0.0	0.0
Approach	192	3.0	192	3.0		0.160		4.3	LOS A	0.7	19.2				
North: Pacific St															
Lane 1 ^d	79	3.0	79	3.0	1104	0.072	100	3.9	LOS A	0.3	7.7	Full	1600	0.0	0.0
Approach	79	3.0	79	3.0		0.072		3.9	LOS A	0.3	7.7				
West: Front St															
Lane 1 ^d	712	3.0	712	3.0	1294	0.551	100	7.9	LOS A	4.8	122.0	Full	1600	0.0	0.0
Approach	712	3.0	712	3.0		0.551		7.9	LOS A	4.8	122.0				
All Vehicles	983	3.0	983	3.0		0.551		6.9	LOS A	4.8	122.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: Front St										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From E To Exit:	W	N			Cap. veh/h	v/c	%	%	Lane No.	
Lane 1	181	10	192	3.0	1197	0.160	100	NA	NA	
Approach	181	10	192	3.0		0.160				
North: Pacific St										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From N To Exit:	E	W			Cap. veh/h	v/c	%	%	Lane No.	
Lane 1	34	45	79	3.0	1104	0.072	100	NA	NA	
Approach	34	45	79	3.0		0.072				
West: Front St										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	
From W To Exit:	N	E			Cap. veh/h	v/c	%	%	Lane No.	

Lane 1	106	606	712	3.0	1294	0.551	100	NA	NA
Approach	106	606	712	3.0		0.551			
Total %HV Deg.Satn (v/c)									
All Vehicles	983	3.0		0.551					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Front St				
Lane 1	0.0	0.0	0.0	0.0
North: Pacific St				
Lane 1	0.0	0.0	0.0	0.0
West: Front St				
Lane 1	0.0	0.0	0.0	0.0

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	20	10	200	169	7
Future Vol, veh/h	9	20	10	200	169	7
Conflicting Peds, #/hr	28	8	52	0	0	52
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	4	7	0
Mvmt Flow	9	20	10	200	169	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	473	233	228	0	-	0
Stage 1	225	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	553	811	1352	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	771	1293	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	10.7	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1293	-	661	-	-	
HCM Lane V/C Ratio	0.008	-	0.044	-	-	
HCM Control Delay (s/veh)	7.8	0	10.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q (veh)	0	-	0.1	-	-	

HCM 6th TWSC
4: Cedar St & Laurel St

CUPP+Laurel Access Control_PM
Timing Plan: PM

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1245	26	0	961	94	0	0	14	0	0	116
Future Vol, veh/h	68	1245	26	0	961	94	0	0	14	0	0	116
Conflicting Peds, #/hr	21	0	30	30	0	21	3	0	14	14	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	5	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	68	1245	26	0	961	94	0	0	14	0	0	116

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1076	0	0	-	-	0	-	-	-	1302	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	-	6.2	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	-	3.3	-	-
Pot Cap-1 Maneuver	637	-	-	0	-	-	0	0	198	0	0	285
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	626	-	-	-	-	-	-	-	191	-	-	279
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.6	0	25.3	26.8
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	191	626	-	-	-	-	279
HCM Lane V/C Ratio	0.073	0.109	-	-	-	-	0.416
HCM Control Delay (s/veh)	25.3	11.5	-	-	-	-	26.8
HCM Lane LOS	D	B	-	-	-	-	D
HCM 95th %tile Q (veh)	0.2	0.4	-	-	-	-	1.9

HCM 6th Signalized Intersection Summary

CUPP+Laurel Access Control_PM

5: Pacific Ave & Laurel St

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	1099	73	83	1031	91	81	96	60	97	59	63
Future Volume (veh/h)	162	1099	73	83	1031	91	81	96	60	97	59	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.68	0.90		0.67
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1885	1826	1900	1826	1900	1826	1737	1455
Adj Flow Rate, veh/h	162	1099	73	83	1031	91	81	96	60	97	59	63
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	1	5	0	5	0	5	11	30
Cap, veh/h	178	1075	71	113	1106	854	238	182	114	99	52	44
Arrive On Green	0.10	0.62	0.62	0.06	0.59	0.59	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1810	1727	115	1810	1885	1456	1289	874	546	268	250	209
Grp Volume(v), veh/h	162	0	1172	83	1031	91	81	0	156	219	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1841	1810	1885	1456	1289	0	1421	727	0	0
Q Serve(g_s), s	10.6	0.0	74.7	5.4	59.9	3.3	0.0	0.0	11.7	13.3	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	74.7	5.4	59.9	3.3	9.9	0.0	11.7	25.0	0.0	0.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.38	0.44		0.29
Lane Grp Cap(c), veh/h	178	0	1146	113	1106	854	238	0	296	195	0	0
V/C Ratio(X)	0.91	0.00	1.02	0.73	0.93	0.11	0.34	0.00	0.53	1.12	0.00	0.00
Avail Cap(c_a), veh/h	178	0	1146	124	1106	854	238	0	296	195	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.35	0.35	0.35	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.6	0.0	22.6	55.3	22.6	10.9	41.5	0.0	42.2	52.6	0.0	0.0
Incr Delay (d2), s/veh	42.0	0.0	32.4	5.8	6.5	0.1	0.8	0.0	1.7	102.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	39.7	2.7	26.8	1.1	2.2	0.0	4.3	11.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	95.6	0.0	55.0	61.1	29.1	11.0	42.4	0.0	44.0	154.6	0.0	0.0
LnGrp LOS	F		F	E	C	B	D		D	F		
Approach Vol, veh/h	1334			1205			237			219		
Approach Delay, s/veh	60.0			29.9			43.4			154.6		
Approach LOS	E			C			D			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	75.0		29.0	11.7	79.3		29.0				
Change Period (Y+Rc), s	4.2	4.6		4.0	4.2	4.6		4.0				
Max Green Setting (Gmax), s	11.8	70.4		25.0	8.2	74.0		25.0				
Max Q Clear Time (g_c+I1), s	12.6	61.9		27.0	7.4	76.7		13.7				
Green Ext Time (p_c), s	0.0	5.2		0.0	0.0	0.0		0.9				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	53.5											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary 6: Front St & Laurel St

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1022	35	253	864	195	26	258	330	202	410	275
Future Volume (veh/h)	175	1022	35	253	864	195	26	258	330	202	410	275
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	175	1022	35	253	864	195	26	258	330	202	410	275
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	164	1289	44	276	805	682	66	415	352	226	583	494
Arrive On Green	0.09	0.36	0.36	0.15	0.42	0.42	0.04	0.22	0.22	0.12	0.31	0.31
Sat Flow, veh/h	1810	3561	122	1810	1900	1610	1810	1900	1610	1810	1900	1610
Grp Volume(v), veh/h	175	518	539	253	864	195	26	258	330	202	410	275
Grp Sat Flow(s),veh/h/ln	1810	1805	1878	1810	1900	1610	1810	1900	1610	1810	1900	1610
Q Serve(g_s), s	12.7	36.0	36.0	19.3	59.3	11.1	2.0	17.2	28.2	15.4	26.7	20.0
Cycle Q Clear(g_c), s	12.7	36.0	36.0	19.3	59.3	11.1	2.0	17.2	28.2	15.4	26.7	20.0
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	653	680	276	805	682	66	415	352	226	583	494
V/C Ratio(X)	1.07	0.79	0.79	0.92	1.07	0.29	0.40	0.62	0.94	0.89	0.70	0.56
Avail Cap(c_a), veh/h	164	653	680	291	805	682	103	428	362	257	589	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	40.0	40.0	58.5	40.4	26.5	66.0	49.5	53.8	60.4	42.9	40.5
Incr Delay (d2), s/veh	41.2	0.9	0.9	25.7	50.1	0.8	1.4	2.6	31.2	26.4	3.7	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	16.1	16.8	10.8	38.5	4.5	0.9	8.5	14.5	8.7	13.2	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	104.9	40.9	40.9	84.2	90.5	27.3	67.4	52.1	85.0	86.7	46.6	41.9
LnGrp LOS	F	D	D	F	F	C	E	D	F	F	D	D
Approach Vol, veh/h	1232		1312				614		887			
Approach Delay, s/veh	50.0		79.9				70.4		54.3			
Approach LOS	D		E				E		D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	63.9	8.8	47.6	25.0	55.3	21.2	35.2				
Change Period (Y+Rc), s	3.7	4.6	3.7	4.6	3.7	4.6	3.7	4.6				
Max Green Setting (Gmax), s	12.7	59.3	8.0	43.4	22.5	49.5	19.9	31.5				
Max Q Clear Time (g_c+I1), s	14.7	61.3	4.0	28.7	21.3	38.0	17.4	30.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.1	5.3	0.1	0.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			63.7									
HCM 6th LOS			E									

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	164	1	13	147	9	11
Future Vol, veh/h	164	1	13	147	9	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	164	1	13	147	9	11
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.1	8	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	45%	0%	8%
Vol Thru, %	0%	99%	92%
Vol Right, %	55%	1%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	20	165	160
LT Vol	9	0	13
Through Vol	0	164	147
RT Vol	11	1	0
Lane Flow Rate	20	165	160
Geometry Grp	1	1	1
Degree of Util (X)	0.024	0.186	0.181
Departure Headway (Hd)	4.352	4.068	4.075
Convergence, Y/N	Yes	Yes	Yes
Cap	828	878	877
Service Time	2.352	2.113	2.12
HCM Lane V/C Ratio	0.024	0.188	0.182
HCM Control Delay, s/veh	7.5	8.1	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.7	0.7

Intersection

Int Delay, s/veh 1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			A
Traffic Vol, veh/h	15	56	577	32	42	551
Future Vol, veh/h	15	56	577	32	42	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	56	577	32	42	551

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1228	593	0
Stage 1	593	-	-
Stage 2	635	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	197	506	-
Stage 1	552	-	-
Stage 2	528	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	185	506	-
Mov Cap-2 Maneuver	185	-	-
Stage 1	552	-	-
Stage 2	495	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	17	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	370	970
HCM Lane V/C Ratio	-	-	0.192	0.043
HCM Control Delay (s/veh)	-	-	17	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q (veh)	-	-	0.7	0.1

LANE SUMMARY

 **Site: 101 [INT #9 CU+P+Laurel Access Control_PM (Site Folder: Cumulative Plus Project Plus Laurel Access Control Conditions)]**

Output produced by SIDRA INTERSECTION Version: 9.0.1.9664

New Site

Site Category: (None)

Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
South: W. Cliff Dr															
Lane 1 ^d	199	3.0	199	3.0	1333	0.149	100	3.9	LOS A	0.6	16.6	Full	1600	0.0	0.0
Lane 2	581	3.0	581	3.0	1333	0.436	100	6.9	LOS A	2.7	70.4	Short	200	0.0	NA
Approach	780	3.0	780	3.0		0.436		6.2	LOS A	2.7	70.4				
East: Pacific Ave															
Lane 1 ^d	713	3.0	713	3.0	1087	0.656	100	12.7	LOS B	7.6	195.2	Full	1600	0.0	0.0
Approach	713	3.0	713	3.0		0.656		12.7	LOS B	7.6	195.2				
North: Center St															
Lane 1 ^d	460	3.0	460	3.0	660	0.697	100	20.5	LOS C	6.6	169.4	Full	1600	0.0	0.0
Approach	460	3.0	460	3.0		0.697		20.5	LOS C	6.6	169.4				
All Vehicles	1953	3.0	1953	3.0		0.697		11.9	LOS B	7.6	195.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: W. Cliff Dr												
Mov.	L3	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	SW	W	N	E								
Lane 1	19	5	175	-	199	3.0	1333	0.149	100	NA	NA	
Lane 2	-	-	-	581	581	3.0	1333	0.436	100	0.0	1	
Approach	19	5	175	581	780	3.0		0.436				
East: Pacific Ave												
Mov.	L2	L1	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	SW	W	N								
Lane 1	462	182	5	63	713	3.0	1087	0.656	100	NA	NA	
Approach	462	182	5	63	713	3.0		0.656				

North: Center St											
Mov.	L2	T1	R1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From N To Exit:	E	S	SW	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	36	194	225	5	460	3.0	660	0.697	100	NA	NA
Approach	36	194	225	5	460	3.0		0.697			
Total %HV Deg.Satn (v/c)											
All Vehicles	1953	3.0		0.697							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: W. Cliff Dr				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Pacific Ave				
Lane 1	0.0	0.0	0.0	0.0
North: Center St				
Lane 1	0.0	0.0	0.0	0.0

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Volume (vph)	843	64	430	691	98	626
Future Volume (vph)	843	64	430	691	98	626
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3514		1805	3574	1787	1570
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3514		1805	3574	1787	1570
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	843	64	430	691	98	626
RTOR Reduction (vph)	4	0	0	0	0	540
Lane Group Flow (vph)	903	0	430	691	98	86
Confl. Peds. (#/hr)		16	16			3
Confl. Bikes (#/hr)		15				
Heavy Vehicles (%)	1%	0%	0%	1%	1%	1%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	2		1 3 9	1 2 3 9	4	
Permitted Phases						4
Actuated Green, G (s)	35.0		74.0	117.0	20.0	20.0
Effective Green, g (s)	35.0		74.0	117.0	20.0	20.0
Actuated g/C Ratio	0.24		0.51	0.81	0.14	0.14
Clearance Time (s)	4.0				4.0	4.0
Vehicle Extension (s)	3.0				3.0	3.0
Lane Grp Cap (vph)	848		921	2883	246	216
v/s Ratio Prot	c0.26		c0.24	0.19	0.05	
v/s Ratio Perm						c0.06
v/c Ratio	1.07		0.47	0.24	0.40	0.40
Uniform Delay, d1	55.0		22.8	3.4	57.0	57.0
Progression Factor	1.00		0.33	0.15	1.00	1.00
Incremental Delay, d2	49.7		0.1	0.0	1.1	1.2
Delay (s)	104.7		7.6	0.5	58.1	58.2
Level of Service	F		A	A	E	E
Approach Delay (s/veh)	104.7			3.2	58.2	
Approach LOS	F			A	E	
Intersection Summary						
HCM 2000 Control Delay (s/veh)			51.2		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			145.0		Sum of lost time (s)	20.0
Intersection Capacity Utilization			71.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Signalized Intersection Capacity Analysis

CUPP+Laurel Access Control_PM

11: Front St/Pacific Ave & Mission St/Water St

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	1137	165	166	893	39	0	0	0	75	371	222
Future Volume (vph)	264	1137	165	166	893	39	0	0	0	75	371	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0						4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95						1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00						1.00	0.92
Flpb, ped/bikes	1.00	1.00		1.00	1.00						1.00	1.00
Frt	1.00	0.98		1.00	0.99						1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (prot)	1787	3474		3502	3521						1853	1470
Flt Permitted	0.95	1.00		0.95	1.00						0.99	1.00
Satd. Flow (perm)	1787	3474		3502	3521						1853	1470
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	264	1137	165	166	893	39	0	0	0	75	371	222
RTOR Reduction (vph)	0	8	0	0	2	0	0	0	0	0	0	136
Lane Group Flow (vph)	264	1294	0	166	930	0	0	0	0	0	446	86
Confl. Peds. (#/hr)	14		26	26		14	43		43	43		43
Confl. Bikes (#/hr)			15			19			1			8
Heavy Vehicles (%)	1%	1%	1%	0%	1%	13%	0%	0%	0%	0%	2%	1%
Turn Type	Prot	NA		Prot	NA					Split	NA	Perm
Protected Phases	4 5	4 5 6		9	6 9					3	3	
Permitted Phases												3
Actuated Green, G (s)	55.0	79.0		20.0	44.0						30.0	30.0
Effective Green, g (s)	55.0	79.0		20.0	44.0						30.0	30.0
Actuated g/C Ratio	0.38	0.54		0.14	0.30						0.21	0.21
Clearance Time (s)				4.0							4.0	4.0
Vehicle Extension (s)				3.0							2.0	2.0
Lane Grp Cap (vph)	677	1892		483	1068						383	304
v/s Ratio Prot	0.15	c0.37		0.05	c0.26						c0.24	
v/s Ratio Perm												0.06
v/c Ratio	0.39	0.68		0.34	0.87						1.16	0.28
Uniform Delay, d1	32.8	23.9		56.6	47.8						57.5	48.5
Progression Factor	0.59	0.69		1.00	1.00						1.00	1.00
Incremental Delay, d2	0.2	0.4		0.4	7.9						98.9	0.2
Delay (s)	19.5	17.0		57.0	55.7						156.4	48.6
Level of Service	B	B		E	E						F	D
Approach Delay (s/veh)		17.4			55.9			0.0			120.6	
Approach LOS		B			E			A			F	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			50.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			145.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			82.3%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 12: River St & Water St

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1170	62	233	964	346	111	392	272	312	426	58
Future Volume (veh/h)	82	1170	62	233	964	346	111	392	272	312	426	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	82	1170	62	233	964	346	111	392	0	312	426	58
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	105	1234	528	219	1461	614	140	637		322	453	62
Arrive On Green	0.06	0.34	0.34	0.12	0.41	0.41	0.08	0.18	0.00	0.18	0.28	0.28
Sat Flow, veh/h	1795	3582	1533	1795	3582	1506	1795	3582	1598	1810	1630	222
Grp Volume(v), veh/h	82	1170	62	233	964	346	111	392	0	312	0	484
Grp Sat Flow(s),veh/h/ln	1795	1791	1533	1795	1791	1506	1795	1791	1598	1810	0	1852
Q Serve(g_s), s	4.1	28.6	2.5	11.0	19.6	15.9	5.5	9.1	0.0	15.4	0.0	23.0
Cycle Q Clear(g_c), s	4.1	28.6	2.5	11.0	19.6	15.9	5.5	9.1	0.0	15.4	0.0	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	105	1234	528	219	1461	614	140	637		322	0	514
V/C Ratio(X)	0.78	0.95	0.12	1.06	0.66	0.56	0.79	0.62		0.97	0.00	0.94
Avail Cap(c_a), veh/h	140	1234	528	219	1461	614	140	637		322	0	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.8	28.7	20.2	39.5	21.6	20.5	40.8	34.2	0.0	36.8	0.0	31.8
Incr Delay (d2), s/veh	8.9	11.9	0.3	78.0	2.4	3.7	24.6	1.8	0.0	41.7	0.0	25.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	13.7	0.9	9.5	8.3	6.0	3.3	4.1	0.0	10.4	0.0	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.7	40.6	20.5	117.5	23.9	24.2	65.4	35.9	0.0	78.5	0.0	57.5
LnGrp LOS	D	D	C	F	C	C	E	D		E		E
Approach Vol, veh/h	1314			1543			503			796		
Approach Delay, s/veh	40.3			38.1			42.4			65.7		
Approach LOS	D			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	35.0	20.0	20.0	9.3	40.7	11.0	29.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	11.0	31.0	16.0	16.0	7.0	35.0	7.0	25.0				
Max Q Clear Time (g_c+I1), s	13.0	30.6	17.4	11.1	6.1	21.6	7.5	25.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.1	0.0	6.8	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 44.6
HCM 6th LOS D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

CUPP+Laurel Access Control_PM

13: Ocean St & Water St

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	518	1579	162	168	1011	339	203	1384	103	522	1473	431
Future Volume (veh/h)	518	1579	162	168	1011	339	203	1384	103	522	1473	431
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1885	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	518	1579	0	168	1011	0	203	1384	103	522	1473	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	0	1	1	1
Cap, veh/h	522	1305		129	1023		154	1202	520	398	1305	
Arrive On Green	0.15	0.36	0.00	0.07	0.29	0.00	0.09	0.34	0.34	0.11	0.36	0.00
Sat Flow, veh/h	3483	3582	1610	1810	3582	1598	1795	3582	1548	3483	3582	1598
Grp Volume(v), veh/h	518	1579	0	168	1011	0	203	1384	103	522	1473	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1610	1810	1791	1598	1795	1791	1548	1742	1791	1598
Q Serve(g_s), s	20.8	51.0	0.0	10.0	39.3	0.0	12.0	47.0	6.6	16.0	51.0	0.0
Cycle Q Clear(g_c), s	20.8	51.0	0.0	10.0	39.3	0.0	12.0	47.0	6.6	16.0	51.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	522	1305		129	1023		154	1202	520	398	1305	
V/C Ratio(X)	0.99	1.21		1.30	0.99		1.32	1.15	0.20	1.31	1.13	
Avail Cap(c_a), veh/h	522	1305		129	1023		154	1202	520	398	1305	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	59.4	44.5	0.0	65.0	49.8	0.0	64.0	46.5	33.1	62.0	44.5	0.0
Incr Delay (d2), s/veh	37.1	101.9	0.0	180.1	25.1	0.0	181.8	77.9	0.9	157.1	68.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	40.9	0.0	11.1	21.1	0.0	13.3	33.8	2.7	15.8	34.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	96.5	146.4	0.0	245.1	74.9	0.0	245.8	124.4	33.9	219.1	112.8	0.0
LnGrp LOS	F	F		F	E		F	F	C	F	F	
Approach Vol, veh/h	2097				1179				1690			
Approach Delay, s/veh	134.1				99.1				133.5			
Approach LOS	F				F				F			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	55.0	16.0	55.0	25.0	44.0	20.0	51.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	10.0	51.0	12.0	51.0	21.0	40.0	16.0	47.0				
Max Q Clear Time (g_c+I1), s	12.0	53.0	14.0	53.0	22.8	41.3	18.0	49.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 129.9

HCM 6th LOS F

Notes

Unsignalized Delay for [EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary 14: Ocean St & Kennan St/Washburn Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	0	54	53	0	39	40	1578	56	59	1778	11
Future Volume (veh/h)	40	0	54	53	0	39	40	1578	56	59	1778	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1885	1900	1900	1885	1900
Adj Flow Rate, veh/h	40	0	54	53	0	39	40	1578	56	59	1778	11
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	0	0	1	0
Cap, veh/h	120	21	113	266	0	213	64	1871	805	141	2023	870
Arrive On Green	0.14	0.00	0.14	0.14	0.00	0.14	0.04	0.52	0.52	0.08	0.56	0.56
Sat Flow, veh/h	465	152	832	1367	0	1564	1810	3582	1541	1810	3582	1540
Grp Volume(v), veh/h	94	0	0	53	0	39	40	1578	56	59	1778	11
Grp Sat Flow(s),veh/h/ln	1449	0	0	1367	0	1564	1810	1791	1541	1810	1791	1540
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	2.0	2.0	33.9	1.6	2.8	38.6	0.3
Cycle Q Clear(g_c), s	5.4	0.0	0.0	3.1	0.0	2.0	2.0	33.9	1.6	2.8	38.6	0.3
Prop In Lane	0.43		0.57	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	254	0	0	266	0	213	64	1871	805	141	2023	870
V/C Ratio(X)	0.37	0.00	0.00	0.20	0.00	0.18	0.63	0.84	0.07	0.42	0.88	0.01
Avail Cap(c_a), veh/h	444	0	0	441	0	417	101	1871	805	141	2023	870
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	34.9	0.0	34.4	42.8	18.4	10.7	39.6	16.9	8.6
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.1	0.0	0.2	3.8	4.9	0.2	2.0	5.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	1.0	0.0	0.8	0.9	14.0	0.6	1.3	15.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.2	0.0	0.0	35.0	0.0	34.6	46.6	23.2	10.8	41.5	22.7	8.6
LnGrp LOS	D			D		C	D	C	B	D	C	A
Approach Vol, veh/h	94		92			1674			1848			
Approach Delay, s/veh	36.2		34.9			23.4			23.3			
Approach LOS	D		C			C			C			
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	16.2		7.2	54.8		16.2	11.0	51.0				
Change Period (Y+Rc), s	4.0		4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s	24.0		5.0	49.0		24.0	7.0	47.0				
Max Q Clear Time (g_c+I1), s	7.4		4.0	40.6		5.1	4.8	35.9				
Green Ext Time (p_c), s	0.3		0.0	6.8		0.2	0.0	8.1				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			23.9									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary 15: Ocean St & Plymouth St & SR-1 Ramp

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩	↩	↩		↩	↩↩	↩	↩	↩↩	
Traffic Volume (veh/h)	71	208	495	127	97	55	405	692	0	186	1146	239
Future Volume (veh/h)	71	208	495	127	97	55	405	692	0	186	1146	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1900	1885	1885	1885	1900	1885	1885
Adj Flow Rate, veh/h	71	208	0	127	97	55	405	692	0	186	1146	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	1	1	1	0	1	1	1	0	1	1
Cap, veh/h	128	266		284	246	140	446	1703		232	1274	
Arrive On Green	0.22	0.22	0.00	0.22	0.22	0.22	0.25	0.48	0.00	0.13	0.36	0.00
Sat Flow, veh/h	281	1205	1598	1176	1117	634	1795	3582	1598	1810	3676	0
Grp Volume(v), veh/h	279	0	0	127	0	152	405	692	0	186	1146	0
Grp Sat Flow(s),veh/h/ln	1486	0	1598	1176	0	1751	1795	1791	1598	1810	1791	0
Q Serve(g_s), s	7.6	0.0	0.0	0.0	0.0	5.1	15.0	8.6	0.0	6.8	20.7	0.0
Cycle Q Clear(g_c), s	12.7	0.0	0.0	11.0	0.0	5.1	15.0	8.6	0.0	6.8	20.7	0.0
Prop In Lane	0.25		1.00	1.00		0.36	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	394	0		284	0	386	446	1703		232	1274	
V/C Ratio(X)	0.71	0.00		0.45	0.00	0.39	0.91	0.41		0.80	0.90	
Avail Cap(c_a), veh/h	416	0		300	0	410	447	1703		371	1310	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.9	0.0	0.0	25.1	0.0	22.7	24.9	11.7	0.0	28.9	20.9	0.0
Incr Delay (d2), s/veh	5.2	0.0	0.0	1.1	0.0	0.7	22.3	0.2	0.0	6.3	8.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	1.9	0.0	2.1	8.7	3.1	0.0	3.2	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.1	0.0	0.0	26.2	0.0	23.4	47.2	11.8	0.0	35.3	29.4	0.0
LnGrp LOS	C			C		C	D	B		D	C	
Approach Vol, veh/h		279			279			1097			1332	
Approach Delay, s/veh		31.1			24.6			24.9			30.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.8	36.5		19.1	21.0	28.3		19.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	14.0	28.0		16.0	17.0	25.0		16.0				
Max Q Clear Time (g_c+I1), s	8.8	10.6		14.7	17.0	22.7		13.0				
Green Ext Time (p_c), s	0.2	4.5		0.2	0.0	1.6		0.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			27.8									
HCM 6th LOS			C									
Notes												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary 16: Laurel St & SR 1/Mission St

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	2304	487	90	1922	48	412	223	56	33	285	23
Future Volume (veh/h)	51	2304	487	90	1922	48	412	223	56	33	285	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1856	1885	1870	1900	1841	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	51	2304	487	90	1922	48	412	223	56	33	285	23
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	3	3	1	2	0	4	1	0	0	0	0
Cap, veh/h	85	2548	1127	96	2583	64	278	362	91	72	228	18
Arrive On Green	0.05	0.72	0.72	0.05	0.73	0.73	0.16	0.25	0.25	0.04	0.13	0.13
Sat Flow, veh/h	1810	3526	1559	1795	3542	88	1753	1444	363	1810	1726	139
Grp Volume(v), veh/h	51	2304	487	90	960	1010	412	0	279	33	0	308
Grp Sat Flow(s),veh/h/ln	1810	1763	1559	1795	1777	1854	1753	0	1807	1810	0	1865
Q Serve(g_s), s	4.1	78.5	18.9	7.5	47.7	48.7	23.8	0.0	20.5	2.7	0.0	19.8
Cycle Q Clear(g_c), s	4.1	78.5	18.9	7.5	47.7	48.7	23.8	0.0	20.5	2.7	0.0	19.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		0.20	1.00		0.07
Lane Grp Cap(c), veh/h	85	2548	1127	96	1295	1351	278	0	453	72	0	246
V/C Ratio(X)	0.60	0.90	0.43	0.94	0.74	0.75	1.48	0.00	0.62	0.46	0.00	1.25
Avail Cap(c_a), veh/h	97	2548	1127	96	1295	1351	278	0	453	97	0	246
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.1	16.6	8.4	70.8	12.0	12.1	63.1	0.0	49.8	70.4	0.0	65.1
Incr Delay (d2), s/veh	6.4	5.9	1.2	72.4	3.8	3.8	234.9	0.0	2.9	3.3	0.0	142.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	31.0	6.5	5.4	18.9	20.1	28.8	0.0	9.7	1.3	0.0	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	76.5	22.5	9.6	143.2	15.8	15.9	298.0	0.0	52.7	73.8	0.0	207.1
LnGrp LOS	E	C	A	F	B	B	F		D	E		F
Approach Vol, veh/h		2842			2060			691			341	
Approach Delay, s/veh		21.3			21.4			199.0			194.2	
Approach LOS		C			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	113.4	28.0	24.4	11.2	114.3	10.2	42.2				
Change Period (Y+Rc), s	4.2	4.6	4.2	* 4.6	4.2	4.6	4.2	4.6				
Max Green Setting (Gmax), s	8.0	81.2	23.8	* 20	8.0	81.2	8.0	35.2				
Max Q Clear Time (g_c+I1), s	9.5	80.5	25.8	21.8	6.1	50.7	4.7	22.5				
Green Ext Time (p_c), s	0.0	0.7	0.0	0.0	0.0	25.3	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			52.0									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary

17: California St & Laurel St

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	888	30	176	801	20	35	224	335	23	169	29
Future Volume (veh/h)	11	888	30	176	801	20	35	224	335	23	169	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	0.99		0.93	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1767	1870	1900	1900	1856	1900	1900	1885	1900	1900	1870	1900
Adj Flow Rate, veh/h	11	888	30	176	801	20	35	224	335	23	169	29
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	9	2	0	0	3	0	0	1	0	0	2	0
Cap, veh/h	27	919	31	210	1102	28	81	379	342	62	289	46
Arrive On Green	0.02	0.51	0.51	0.12	0.61	0.61	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1682	1796	61	1810	1801	45	155	1655	1497	76	1265	203
Grp Volume(v), veh/h	11	0	918	176	0	821	259	0	335	221	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	1857	1810	0	1846	1810	0	1497	1543	0	0
Q Serve(g_s), s	0.6	0.0	42.6	8.5	0.0	27.7	0.0	0.0	19.8	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	42.6	8.5	0.0	27.7	11.1	0.0	19.8	11.9	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.02	0.14		1.00	0.10		0.13
Lane Grp Cap(c), veh/h	27	0	950	210	0	1129	460	0	342	398	0	0
V/C Ratio(X)	0.41	0.00	0.97	0.84	0.00	0.73	0.56	0.00	0.98	0.56	0.00	0.00
Avail Cap(c_a), veh/h	113	0	962	215	0	1129	460	0	342	408	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	43.5	0.0	21.0	38.6	0.0	12.1	30.8	0.0	34.2	30.3	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.0	21.2	22.4	0.0	2.4	1.6	0.0	42.7	1.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	22.3	5.0	0.0	10.7	5.1	0.0	11.1	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.1	0.0	42.2	61.0	0.0	14.5	32.4	0.0	76.9	31.9	0.0	0.0
LnGrp LOS	D		D	E		B	C		E	C		
Approach Vol, veh/h	929				997				594			
Approach Delay, s/veh	42.3				22.7				57.5			
Approach LOS	D				C				E			
Timer - Assigned Phs	1	2			4	5	6			8		
Phs Duration (G+Y+Rc), s	14.6	49.6			25.0	5.6	58.6			25.0		
Change Period (Y+Rc), s	4.2	4.0			* 4.6	4.2	4.0			4.6		
Max Green Setting (Gmax), s	10.6	46.2			* 21	6.0	50.8			20.4		
Max Q Clear Time (g_c+I1), s	10.5	44.6			13.9	2.6	29.7			21.8		
Green Ext Time (p_c), s	0.0	1.0			0.7	0.0	6.4			0.0		
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	37.6											
HCM 6th LOS	D											
Notes												

HCM 6th Signalized Intersection Summary

18: Chestnut St & Laurel St

CUPP+Laurel Access Control_PM

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	1051	91	79	923	28	141	59	95	32	72	76
Future Volume (veh/h)	111	1051	91	79	923	28	141	59	95	32	72	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.98		0.93	0.98		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1885	1900	1900	1870	1900	1900	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	111	1051	91	79	923	28	141	59	95	32	72	76
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	1	0	0	2	0	0	0	0	0	2	0
Cap, veh/h	139	1005	802	121	941	29	68	13	385	52	92	383
Arrive On Green	0.08	0.53	0.53	0.13	1.00	1.00	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	1885	1504	1810	1801	55	0	50	1505	0	361	1500
Grp Volume(v), veh/h	111	1051	91	79	0	951	200	0	95	104	0	76
Grp Sat Flow(s),veh/h/ln	1781	1885	1504	1810	0	1856	50	0	1505	361	0	1500
Q Serve(g_s), s	5.5	48.0	2.7	3.7	0.0	0.0	0.0	0.0	4.5	0.0	0.0	3.6
Cycle Q Clear(g_c), s	5.5	48.0	2.7	3.7	0.0	0.0	23.0	0.0	4.5	23.0	0.0	3.6
Prop In Lane	1.00		1.00	1.00		0.03	0.70		1.00	0.31		1.00
Lane Grp Cap(c), veh/h	139	1005	802	121	0	970	81	0	385	144	0	383
V/C Ratio(X)	0.80	1.05	0.11	0.65	0.00	0.98	2.47	0.00	0.25	0.72	0.00	0.20
Avail Cap(c_a), veh/h	139	1005	802	141	0	990	81	0	385	144	0	383
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.00	0.52	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	21.0	10.4	38.0	0.0	0.0	41.4	0.0	26.6	28.3	0.0	26.3
Incr Delay (d2), s/veh	25.8	41.0	0.1	2.7	0.0	16.7	695.8	0.0	0.3	15.9	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	30.3	0.9	1.7	0.0	4.5	17.5	0.0	1.6	2.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	66.6	62.0	10.5	40.7	0.0	16.7	737.2	0.0	27.0	44.3	0.0	26.5
LnGrp LOS	E	F	B	D		B	F		C	D		C
Approach Vol, veh/h	1253			1030			295			180		
Approach Delay, s/veh	58.6			18.6			508.5			36.8		
Approach LOS	E			B			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	52.0		27.0	11.0	51.0		27.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	7.0	48.0		23.0	7.0	48.0		23.0				
Max Q Clear Time (g_c+I1), s	5.7	50.0		25.0	7.5	2.0		25.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	10.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	90.4											
HCM 6th LOS	F											

HCM 6th Signalized Intersection Summary

19: Center St & Laurel St

CUPP+Laurel Access Control_PM

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1009	96	66	872	62	70	99	62	133	84	50
Future Volume (veh/h)	30	1009	96	66	872	62	70	99	62	133	84	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	0.97		0.93	0.97		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1870	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	30	1009	96	66	872	62	70	99	62	133	84	50
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	2	0	2	0	0	0	0	0	0	0
Cap, veh/h	42	972	93	84	1032	73	279	240	151	257	244	145
Arrive On Green	0.02	0.58	0.58	0.05	0.60	0.60	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	1683	160	1810	1718	122	1234	1060	664	1207	1077	641
Grp Volume(v), veh/h	30	0	1105	66	0	934	70	0	161	133	0	134
Grp Sat Flow(s),veh/h/ln	1810	0	1843	1810	0	1840	1234	0	1724	1207	0	1718
Q Serve(g_s), s	1.5	0.0	52.0	3.2	0.0	37.0	4.5	0.0	7.2	9.5	0.0	5.9
Cycle Q Clear(g_c), s	1.5	0.0	52.0	3.2	0.0	37.0	10.4	0.0	7.2	16.7	0.0	5.9
Prop In Lane	1.00		0.09	1.00		0.07	1.00		0.39	1.00		0.37
Lane Grp Cap(c), veh/h	42	0	1065	84	0	1106	279	0	391	257	0	389
V/C Ratio(X)	0.71	0.00	1.04	0.78	0.00	0.84	0.25	0.00	0.41	0.52	0.00	0.34
Avail Cap(c_a), veh/h	84	0	1065	84	0	1106	279	0	391	257	0	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.00	0.38	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	0.0	19.0	42.4	0.0	14.6	33.6	0.0	29.7	36.8	0.0	29.2
Incr Delay (d2), s/veh	3.1	0.0	27.8	33.9	0.0	8.0	2.1	0.0	3.2	7.2	0.0	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	27.5	2.2	0.0	15.9	1.5	0.0	3.3	3.3	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.7	0.0	46.8	76.4	0.0	22.5	35.7	0.0	32.9	44.0	0.0	31.6
LnGrp LOS	D		F	E		C	D		C	D		C
Approach Vol, veh/h	1135		1000			231			267			
Approach Delay, s/veh	46.8		26.1			33.7			37.8			
Approach LOS	D		C			C			D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	56.6		25.3	6.3	58.7		25.3				
Change Period (Y+Rc), s	4.2	4.6		4.9	4.2	4.6		* 4.9				
Max Green Setting (Gmax), s	4.2	52.0		20.1	4.2	52.0		* 20				
Max Q Clear Time (g_c+I1), s	5.2	54.0		12.4	3.5	39.0		18.7				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	7.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				36.8								
HCM 6th LOS				D								
Notes												

HCM 6th Signalized Intersection Summary 20: Laurel St/Broadway & San Lorenzo Blvd

CUPP+Laurel Access Control_PM
Timing Plan: PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (veh/h)	519	33	945	557	0	733
Future Volume (veh/h)	519	33	945	557	0	733
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1900	1885	1870	0	1885
Adj Flow Rate, veh/h	519	0	945	0	0	733
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	0	1	2	0	1
Cap, veh/h	570		937		0	1781
Arrive On Green	0.32	0.00	0.99	0.00	0.00	0.50
Sat Flow, veh/h	1795	1610	1885	1585	0	3770
Grp Volume(v), veh/h	519	0	945	0	0	733
Grp Sat Flow(s),veh/h/ln	1795	1610	1885	1585	0	1791
Q Serve(g_s), s	19.4	0.0	34.8	0.0	0.0	9.1
Cycle Q Clear(g_c), s	19.4	0.0	34.8	0.0	0.0	9.1
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	570		937		0	1781
V/C Ratio(X)	0.91		1.01		0.00	0.41
Avail Cap(c_a), veh/h	667		937		0	1781
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.57	0.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	0.2	0.0	0.0	11.1
Incr Delay (d2), s/veh	15.1	0.0	24.2	0.0	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	0.0	6.4	0.0	0.0	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	38.1	0.0	24.4	0.0	0.0	11.8
LnGrp LOS	D		F			B
Approach Vol, veh/h	519		945			733
Approach Delay, s/veh	38.1		24.4			11.8
Approach LOS	D		C			B
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	39.4		39.4		26.8	
Change Period (Y+Rc), s	4.6		4.6		4.6	
Max Green Setting (Gmax), s	34.8		34.8		26.0	
Max Q Clear Time (g_c+l1), s	36.8		11.1		21.4	
Green Ext Time (p_c), s	0.0		5.4		0.8	
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			23.4			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary 21: Ocean St & Broadway

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	548	47	102	461	118	0	521	89	0	763	310
Future Volume (veh/h)	277	548	47	102	461	118	0	521	89	0	763	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.96	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1841	1900	1885	1870	0	1900	1900	0	1885	1900
Adj Flow Rate, veh/h	277	548	47	102	461	118	0	521	89	0	763	310
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	4	0	1	2	0	0	0	0	1	0
Cap, veh/h	312	750	64	130	486	124	0	1283	551	0	859	348
Arrive On Green	0.17	0.44	0.44	0.07	0.34	0.34	0.00	0.36	0.36	0.00	0.36	0.36
Sat Flow, veh/h	1810	1707	146	1810	1435	367	0	3705	1552	0	2510	981
Grp Volume(v), veh/h	277	0	595	102	0	579	0	521	89	0	565	508
Grp Sat Flow(s),veh/h/ln	1810	0	1853	1810	0	1802	0	1805	1552	0	1791	1606
Q Serve(g_s), s	13.5	0.0	23.9	5.0	0.0	28.2	0.0	9.8	3.5	0.0	26.8	26.8
Cycle Q Clear(g_c), s	13.5	0.0	23.9	5.0	0.0	28.2	0.0	9.8	3.5	0.0	26.8	26.8
Prop In Lane	1.00		0.08	1.00		0.20	0.00		1.00	0.00		0.61
Lane Grp Cap(c), veh/h	312	0	814	130	0	611	0	1283	551	0	636	571
V/C Ratio(X)	0.89	0.00	0.73	0.78	0.00	0.95	0.00	0.41	0.16	0.00	0.89	0.89
Avail Cap(c_a), veh/h	322	0	814	161	0	621	0	1283	551	0	636	571
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.64	0.64
Uniform Delay (d), s/veh	36.4	0.0	20.8	41.1	0.0	29.0	0.0	21.9	19.8	0.0	27.3	27.3
Incr Delay (d2), s/veh	24.2	0.0	3.4	18.2	0.0	23.8	0.0	1.0	0.6	0.0	11.7	12.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	10.5	2.9	0.0	15.7	0.0	4.2	3.8	0.0	13.0	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.6	0.0	24.2	59.2	0.0	52.8	0.0	22.8	20.5	0.0	39.0	40.3
LnGrp LOS	E		C	E		D		C	C		D	D
Approach Vol, veh/h	872			681			610			1073		
Approach Delay, s/veh	35.7			53.7			22.5			39.6		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	43.6		36.0	19.5	34.5		36.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	39.0		31.0	16.0	31.0		31.0				
Max Q Clear Time (g_c+I1), s	7.0	25.9		11.8	15.5	30.2		28.8				
Green Ext Time (p_c), s	0.0	3.3		3.7	0.1	0.3		1.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				38.3								
HCM 6th LOS				D								

HCM 6th Signalized Intersection Summary 22: Riverside Ave/Dakota Ave & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇌			⇌			⇌			⇌	
Traffic Volume (veh/h)	13	974	3	11	708	17	36	17	85	29	2	72
Future Volume (veh/h)	13	974	3	11	708	17	36	17	85	29	2	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.92	0.99		0.92	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1885	1900	1900	1870	1796	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	974	3	11	708	17	36	17	85	29	2	72
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	1	0	0	2	7	0	0	0	0	0	0
Cap, veh/h	73	1406	4	73	1354	32	217	128	422	230	56	470
Arrive On Green	0.40	0.40	0.40	0.79	0.79	0.79	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	15	3547	11	16	3417	81	308	294	967	335	128	1077
Grp Volume(v), veh/h	516	0	474	385	0	351	138	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	1861	0	1712	1835	0	1679	1570	0	0	1540	0	0
Q Serve(g_s), s	0.0	0.0	12.7	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	12.7	4.0	0.0	4.1	2.8	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.03		0.01	0.03		0.05	0.26		0.62	0.28		0.70
Lane Grp Cap(c), veh/h	805	0	679	795	0	666	768	0	0	756	0	0
V/C Ratio(X)	0.64	0.00	0.70	0.48	0.00	0.53	0.18	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	805	0	679	795	0	666	768	0	0	756	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.75	0.00	0.75	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.8	0.0	13.9	3.9	0.0	3.9	9.5	0.0	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	3.9	0.0	5.9	1.6	0.0	2.2	0.5	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	5.3	1.2	0.0	1.2	1.0	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.7	0.0	19.7	5.4	0.0	6.1	10.0	0.0	0.0	9.7	0.0	0.0
LnGrp LOS	B		B	A		A	B			A		
Approach Vol, veh/h		990			736			138			103	
Approach Delay, s/veh		18.7			5.8			10.0			9.7	
Approach LOS		B			A			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.4		28.6		26.4		28.6				
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6				
Max Green Setting (Gmax), s		21.8		24.0		21.8		24.0				
Max Q Clear Time (g_c+I1), s		14.7		4.8		6.1		4.0				
Green Ext Time (p_c), s		3.6		0.7		4.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				12.8								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 23: Ocean St & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	273	645	129	249	442	83	318	832	421	468	512	274
Future Volume (veh/h)	273	645	129	249	442	83	318	832	421	468	512	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1900	1900	1885	1885	1900	1885	1900	1885	1885	1885
Adj Flow Rate, veh/h	273	645	129	249	442	83	318	832	421	468	512	274
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0	1	1	1
Cap, veh/h	261	697	139	230	781	335	350	814	356	473	1066	459
Arrive On Green	0.15	0.24	0.24	0.13	0.22	0.22	0.19	0.23	0.23	0.26	0.30	0.30
Sat Flow, veh/h	1795	2949	589	1810	3582	1535	1810	3582	1568	1795	3582	1542
Grp Volume(v), veh/h	273	391	383	249	442	83	318	832	421	468	512	274
Grp Sat Flow(s),veh/h/ln	1795	1791	1746	1810	1791	1535	1810	1791	1568	1795	1791	1542
Q Serve(g_s), s	16.0	23.5	23.6	14.0	12.1	4.9	18.9	25.0	25.0	28.6	12.9	16.7
Cycle Q Clear(g_c), s	16.0	23.5	23.6	14.0	12.1	4.9	18.9	25.0	25.0	28.6	12.9	16.7
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	423	413	230	781	335	350	814	356	473	1066	459
V/C Ratio(X)	1.05	0.92	0.93	1.08	0.57	0.25	0.91	1.02	1.18	0.99	0.48	0.60
Avail Cap(c_a), veh/h	261	423	413	230	781	335	510	814	356	473	1066	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.31	0.31	0.31	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	41.0	41.1	48.0	38.4	35.5	43.4	42.5	42.5	40.3	31.7	33.0
Incr Delay (d2), s/veh	55.1	19.5	20.3	57.2	0.9	0.5	10.1	33.9	102.7	38.2	1.6	5.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.1	12.5	12.3	9.9	5.4	1.9	9.4	14.7	19.7	17.4	5.8	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	102.1	60.5	61.3	105.2	39.3	36.1	53.5	76.4	145.2	78.6	33.2	38.6
LnGrp LOS	F	E	E	F	D	D	D	F	F	E	C	D
Approach Vol, veh/h		1047			774			1571			1254	
Approach Delay, s/veh		71.7			60.1			90.2			51.3	
Approach LOS		E			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	30.0	33.0	29.0	20.0	28.0	25.3	36.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	14.0	26.0	29.0	25.0	16.0	24.0	31.0	23.0				
Max Q Clear Time (g_c+I1), s	16.0	25.6	30.6	27.0	18.0	14.1	20.9	18.7				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	0.0	2.3	0.4	1.8				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			70.5									
HCM 6th LOS			E									

HCM 6th Signalized Intersection Summary 24: Branciforte Ave & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	896	112	101	657	34	56	143	79	58	170	117
Future Volume (veh/h)	164	896	112	101	657	34	56	143	79	58	170	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.92	0.99		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1870	1885	1870
Adj Flow Rate, veh/h	164	896	112	101	657	34	56	143	79	58	170	117
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	2	1	2
Cap, veh/h	414	1635	204	153	651	34	93	161	76	122	280	349
Arrive On Green	0.23	0.52	0.52	0.08	0.37	0.37	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	3174	397	1810	1754	91	137	705	334	253	1227	1525
Grp Volume(v), veh/h	164	506	502	101	0	691	278	0	0	228	0	117
Grp Sat Flow(s),veh/h/ln	1810	1791	1780	1810	0	1845	1176	0	0	1480	0	1525
Q Serve(g_s), s	5.4	13.3	13.3	3.8	0.0	26.0	6.9	0.0	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s	5.4	13.3	13.3	3.8	0.0	26.0	16.0	0.0	0.0	9.1	0.0	4.5
Prop In Lane	1.00		0.22	1.00		0.05	0.20		0.28	0.25		1.00
Lane Grp Cap(c), veh/h	414	923	917	153	0	685	331	0	0	403	0	349
V/C Ratio(X)	0.40	0.55	0.55	0.66	0.00	1.01	0.84	0.00	0.00	0.57	0.00	0.34
Avail Cap(c_a), veh/h	414	923	917	414	0	685	331	0	0	403	0	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	0.27	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.9	11.5	11.5	31.0	0.0	22.0	27.4	0.0	0.0	24.0	0.0	22.6
Incr Delay (d2), s/veh	0.8	0.6	0.6	4.7	0.0	36.5	17.4	0.0	0.0	1.8	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.8	4.7	1.8	0.0	17.1	6.1	0.0	0.0	3.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.7	12.1	12.1	35.8	0.0	58.5	44.8	0.0	0.0	25.8	0.0	23.1
LnGrp LOS	C	B	B	D		F	D			C		C
Approach Vol, veh/h	1172			792			278			345		
Approach Delay, s/veh	13.7			55.6			44.8			24.9		
Approach LOS	B			E			D			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	40.1		20.0	20.0	30.0		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	16.0	26.0		16.0	16.0	26.0		16.0				
Max Q Clear Time (g_c+I1), s	5.8	15.3		11.1	7.4	28.0		18.0				
Green Ext Time (p_c), s	0.1	4.8		0.8	0.3	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				31.4								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary 25: Seabright Ave & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1128	125	179	663	16	217	45	223	90	128	70
Future Volume (veh/h)	32	1128	125	179	663	16	217	45	223	90	128	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.89	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1870	1885	1900	1885	1900	1900	1900	1870	1900
Adj Flow Rate, veh/h	32	1128	125	179	663	16	217	45	223	90	128	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	2	1	0	1	0	0	0	2	0
Cap, veh/h	40	1224	135	196	856	21	257	53	245	129	183	257
Arrive On Green	0.02	0.38	0.38	0.11	0.47	0.47	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3222	356	1781	1830	44	1511	313	1438	757	1076	1511
Grp Volume(v), veh/h	32	626	627	179	0	679	262	0	223	218	0	70
Grp Sat Flow(s),veh/h/ln	1810	1791	1787	1781	0	1874	1824	0	1438	1833	0	1511
Q Serve(g_s), s	1.8	33.3	33.5	9.9	0.0	30.2	13.9	0.0	15.2	11.2	0.0	4.0
Cycle Q Clear(g_c), s	1.8	33.3	33.5	9.9	0.0	30.2	13.9	0.0	15.2	11.2	0.0	4.0
Prop In Lane	1.00		0.20	1.00		0.02	0.83		1.00	0.41		1.00
Lane Grp Cap(c), veh/h	40	681	679	196	0	877	310	0	245	312	0	257
V/C Ratio(X)	0.80	0.92	0.92	0.91	0.00	0.77	0.84	0.00	0.91	0.70	0.00	0.27
Avail Cap(c_a), veh/h	72	681	679	196	0	877	310	0	245	312	0	257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.7	29.5	29.6	44.0	0.0	22.2	40.2	0.0	40.8	39.1	0.0	36.1
Incr Delay (d2), s/veh	29.1	19.6	20.2	40.9	0.0	6.6	23.6	0.0	38.6	12.3	0.0	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	17.5	17.6	6.6	0.0	14.3	8.2	0.0	7.9	6.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.8	49.1	49.8	84.9	0.0	28.8	63.8	0.0	79.4	51.4	0.0	38.7
LnGrp LOS	E	D	D	F		C	E		E	D		D
Approach Vol, veh/h	1285			858			485			288		
Approach Delay, s/veh	50.2			40.5			71.0			48.3		
Approach LOS	D			D			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	43.0		21.0	6.2	51.8		21.0				
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0				
Max Green Setting (Gmax), s	11.0	38.0		17.0	4.0	45.0		17.0				
Max Q Clear Time (g_c+I1), s	11.9	35.5		17.2	3.8	32.2		13.2				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	3.9		0.5				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				50.6								
HCM 6th LOS				D								

HCM 6th Signalized Intersection Summary 26: Morrissey Blvd & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	561	1722	38	63	1525	36	19	127	30	293	233	110
Future Volume (veh/h)	561	1722	38	63	1525	36	19	127	30	293	233	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	561	1722	38	63	1525	0	19	127	30	293	233	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	624	1884	41	81	1404		316	446	105	373	570	
Arrive On Green	0.18	0.52	0.52	0.04	0.39	0.00	0.30	0.30	0.30	0.30	0.30	0.00
Sat Flow, veh/h	3510	3611	79	1810	3705	0	1166	1486	351	1249	1900	1610
Grp Volume(v), veh/h	561	859	901	63	1525	0	19	0	157	293	233	0
Grp Sat Flow(s),veh/h/ln	1755	1805	1886	1810	1805	0	1166	0	1837	1249	1900	1610
Q Serve(g_s), s	14.1	39.1	39.4	3.1	35.0	0.0	1.2	0.0	5.9	21.1	8.8	0.0
Cycle Q Clear(g_c), s	14.1	39.1	39.4	3.1	35.0	0.0	10.0	0.0	5.9	27.0	8.8	0.0
Prop In Lane	1.00		0.04	1.00		0.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	624	942	984	81	1404		316	0	551	373	570	
V/C Ratio(X)	0.90	0.91	0.92	0.77	1.09		0.06	0.00	0.28	0.79	0.41	
Avail Cap(c_a), veh/h	624	942	984	101	1404		316	0	551	373	570	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.2	19.6	19.7	42.5	27.5	0.0	29.1	0.0	24.1	34.4	25.1	0.0
Incr Delay (d2), s/veh	15.6	14.5	14.5	16.2	48.9	0.0	0.1	0.0	0.3	9.7	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	18.6	19.6	1.7	23.8	0.0	0.3	0.0	2.6	7.2	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.8	34.1	34.2	58.8	76.4	0.0	29.2	0.0	24.4	44.2	25.3	0.0
LnGrp LOS	D	C	C	E	F		C		C	D	C	
Approach Vol, veh/h	2321				1588				176			
Approach Delay, s/veh	38.4				75.7				24.9			
Approach LOS	D				E				C			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	51.0		31.0	20.0	39.0		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	46.0		27.0	16.0	35.0		27.0				
Max Q Clear Time (g_c+I1), s	5.1	41.4		29.0	16.1	37.0		12.0				
Green Ext Time (p_c), s	0.0	3.9		0.0	0.0	0.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 50.5
HCM 6th LOS D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
27: Frederick St & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1782	93	226	1452	146	433
Future Volume (veh/h)	1782	93	226	1452	146	433
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.95	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1870	1900	1870	1900	1885
Adj Flow Rate, veh/h	1782	93	226	1452	146	433
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	1	2	0	2	0	1
Cap, veh/h	1766	91	241	2448	402	568
Arrive On Green	0.68	0.68	0.13	0.69	0.22	0.22
Sat Flow, veh/h	3549	179	1810	3647	1810	1598
Grp Volume(v), veh/h	915	960	226	1452	146	433
Grp Sat Flow(s),veh/h/ln	1791	1843	1810	1777	1810	1598
Q Serve(g_s), s	45.9	46.0	11.1	19.3	6.1	20.0
Cycle Q Clear(g_c), s	45.9	46.0	11.1	19.3	6.1	20.0
Prop In Lane		0.10	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	915	942	241	2448	402	568
V/C Ratio(X)	1.00	1.02	0.94	0.59	0.36	0.76
Avail Cap(c_a), veh/h	915	942	241	2448	402	568
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.33	0.33	0.64	0.64	1.00	1.00
Uniform Delay (d), s/veh	14.4	14.4	38.6	7.4	29.6	25.6
Incr Delay (d2), s/veh	17.0	21.9	30.3	0.2	2.5	9.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.2	18.0	6.9	6.1	2.9	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	31.4	36.3	68.9	7.6	32.1	35.0
LnGrp LOS	C	F	E	A	C	C
Approach Vol, veh/h	1875			1678	579	
Approach Delay, s/veh	33.9			15.9	34.3	
Approach LOS	C			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	16.0	50.0			66.0	24.0
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	12.0	46.0			62.0	20.0
Max Q Clear Time (g_c+l1), s	13.1	48.0			21.3	22.0
Green Ext Time (p_c), s	0.0	0.0			16.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay, s/veh			26.6			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary 28: Hagemann Ave/Trevethan Ave & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	2111	53	22	1530	24	77	14	34	74	14	95
Future Volume (veh/h)	77	2111	53	22	1530	24	77	14	34	74	14	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1870	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	77	2111	53	22	1530	24	77	14	34	74	14	95
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	0	0	2	0	0	0	0	0	0	0
Cap, veh/h	99	2373	59	43	2269	36	204	43	68	153	42	150
Arrive On Green	0.11	1.00	1.00	0.05	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	3566	89	1810	3578	56	785	245	385	547	234	843
Grp Volume(v), veh/h	77	1054	1110	22	759	795	125	0	0	183	0	0
Grp Sat Flow(s),veh/h/ln	1810	1791	1865	1810	1777	1857	1415	0	0	1624	0	0
Q Serve(g_s), s	3.7	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	0.0	1.1	0.0	0.0	7.1	0.0	0.0	8.8	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.03	0.62		0.27	0.40		0.52
Lane Grp Cap(c), veh/h	99	1192	1241	43	1127	1178	316	0	0	345	0	0
V/C Ratio(X)	0.78	0.88	0.89	0.52	0.67	0.68	0.40	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	181	1192	1241	101	1127	1178	316	0	0	345	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.17	0.17	0.17	0.75	0.75	0.75	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	39.5	0.0	0.0	42.4	0.0	0.0	33.2	0.0	0.0	34.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	1.9	2.0	7.1	2.4	2.3	3.7	0.0	0.0	5.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.6	0.7	0.6	0.8	0.8	2.7	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.8	1.9	2.0	49.5	2.4	2.3	36.9	0.0	0.0	39.7	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	D			D		
Approach Vol, veh/h	2241				1576				125		183	
Approach Delay, s/veh	3.3				3.0				36.9		39.7	
Approach LOS	A				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	63.9		20.0	8.9	61.1		20.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	57.0		16.0	9.0	53.0		16.0				
Max Q Clear Time (g_c+I1), s	3.1	2.0		10.8	5.7	2.0		9.1				
Green Ext Time (p_c), s	0.0	35.6		0.3	0.0	17.8		0.2				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh	5.8											
HCM 6th LOS	A											

HCM 6th Signalized Intersection Summary 29: Park Way & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	2166	30	12	1436	28	53	18	26	128	7	70
Future Volume (veh/h)	39	2166	30	12	1436	28	53	18	26	128	7	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1870	1856	1900	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	39	2166	30	12	1436	28	53	18	26	128	7	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	0	0	2	3	0	0	0	0	0	3
Cap, veh/h	101	2339	32	26	2177	42	181	64	67	216	15	86
Arrive On Green	0.06	0.65	0.65	0.01	0.61	0.61	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3586	50	1810	3562	69	717	389	405	915	88	520
Grp Volume(v), veh/h	39	1070	1126	12	716	748	97	0	0	205	0	0
Grp Sat Flow(s),veh/h/ln	1810	1777	1859	1810	1777	1854	1511	0	0	1524	0	0
Q Serve(g_s), s	1.9	47.4	48.1	0.6	23.6	23.7	0.0	0.0	0.0	6.5	0.0	0.0
Cycle Q Clear(g_c), s	1.9	47.4	48.1	0.6	23.6	23.7	4.9	0.0	0.0	11.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.04	0.55		0.27	0.62		0.34
Lane Grp Cap(c), veh/h	101	1159	1213	26	1086	1133	312	0	0	317	0	0
V/C Ratio(X)	0.39	0.92	0.93	0.46	0.66	0.66	0.31	0.00	0.00	0.65	0.00	0.00
Avail Cap(c_a), veh/h	121	1159	1213	101	1086	1133	346	0	0	350	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.36	0.36	0.36	0.86	0.86	0.86	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	41.0	13.7	13.8	44.0	11.4	11.4	33.3	0.0	0.0	35.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	5.8	5.9	4.0	2.7	2.6	0.6	0.0	0.0	3.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	17.5	18.6	0.3	9.0	9.4	1.9	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.3	19.4	19.7	48.0	14.1	14.0	33.8	0.0	0.0	39.4	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	C			D		
Approach Vol, veh/h	2235			1476			97			205		
Approach Delay, s/veh	19.9			14.3			33.8			39.4		
Approach LOS	B			B			C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	62.7		18.9	9.0	59.0		18.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	56.0		17.0	6.0	55.0		17.0				
Max Q Clear Time (g_c+l1), s	2.6	50.1		6.9	3.9	25.7		13.4				
Green Ext Time (p_c), s	0.0	5.5		0.3	0.0	13.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay, s/veh				19.2								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary 30: Capitola Rd/Driveway & Soquel Ave

CUPP+Laurel Access Control_PM
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	935	1153	79	693	25	714	16	77	47	25	28
Future Volume (veh/h)	20	935	1153	79	693	25	714	16	77	47	25	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1900	1870	1885	1870	1870	1900	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	20	935	0	79	693	25	725	0	0	47	25	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	2	1	2	2	0	1	0	0	0	0	0
Cap, veh/h	35	2008		79	2060	74	718	0		86	46	111
Arrive On Green	0.02	0.57	0.00	0.04	0.59	0.59	0.20	0.00	0.00	0.07	0.07	0.07
Sat Flow, veh/h	1810	3554	1598	1781	3492	126	3591	0	1610	1201	639	1543
Grp Volume(v), veh/h	20	935	0	79	352	366	725	0	0	72	0	28
Grp Sat Flow(s),veh/h/ln	1810	1777	1598	1781	1777	1841	1795	0	1610	1840	0	1543
Q Serve(g_s), s	1.5	21.0	0.0	6.0	13.7	13.7	27.0	0.0	0.0	5.1	0.0	2.3
Cycle Q Clear(g_c), s	1.5	21.0	0.0	6.0	13.7	13.7	27.0	0.0	0.0	5.1	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	35	2008		79	1048	1086	718	0		132	0	111
V/C Ratio(X)	0.57	0.47		1.00	0.34	0.34	1.01	0.00		0.54	0.00	0.25
Avail Cap(c_a), veh/h	67	2008		79	1048	1086	718	0		300	0	251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.6	17.3	0.0	64.5	14.2	14.2	54.0	0.0	0.0	60.5	0.0	59.2
Incr Delay (d2), s/veh	2.0	0.3	0.0	100.4	0.9	0.8	36.0	0.0	0.0	1.3	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.6	0.0	4.9	5.7	6.0	15.8	0.0	0.0	2.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	67.7	17.6	0.0	164.9	15.0	15.0	90.0	0.0	0.0	61.8	0.0	59.6
LnGrp LOS	E	B		F	B	B	F			E		E
Approach Vol, veh/h	955				797				725			
Approach Delay, s/veh	18.7				29.9				90.0			
Approach LOS	B				C				F			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	80.3		13.7	6.6	83.6		31.0				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.0	64.0		22.0	5.0	65.0		27.0				
Max Q Clear Time (g_c+I1), s	8.0	23.0		7.1	3.5	15.7		29.0				
Green Ext Time (p_c), s	0.0	8.3		0.2	0.0	5.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 43.8
HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

31: Morrissey Blvd & Fairmount Ave

CUPP+Laurel Access Control_PM

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	89	127	24	27	82	53	820	28	53	897	108
Future Volume (veh/h)	160	89	127	24	27	82	53	820	28	53	897	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	160	89	127	24	27	82	53	820	28	53	897	108
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	232	129	315	118	133	214	124	985	34	124	898	108
Arrive On Green	0.20	0.20	0.20	0.13	0.13	0.13	0.07	0.28	0.28	0.07	0.28	0.28
Sat Flow, veh/h	1183	658	1610	874	983	1586	1810	3562	122	1810	3244	391
Grp Volume(v), veh/h	249	0	127	51	0	82	53	416	432	53	499	506
Grp Sat Flow(s),veh/h/ln	1841	0	1610	1856	0	1586	1810	1805	1878	1810	1805	1830
Q Serve(g_s), s	7.5	0.0	4.1	1.4	0.0	2.8	1.7	12.8	12.8	1.7	16.4	16.4
Cycle Q Clear(g_c), s	7.5	0.0	4.1	1.4	0.0	2.8	1.7	12.8	12.8	1.7	16.4	16.4
Prop In Lane	0.64		1.00	0.47		1.00	1.00		0.06	1.00		0.21
Lane Grp Cap(c), veh/h	360	0	315	250	0	214	124	499	520	124	499	506
V/C Ratio(X)	0.69	0.00	0.40	0.20	0.00	0.38	0.43	0.83	0.83	0.43	1.00	1.00
Avail Cap(c_a), veh/h	882	0	772	282	0	241	214	524	545	214	499	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	20.8	22.8	0.0	23.4	26.5	20.1	20.1	26.5	21.4	21.4
Incr Delay (d2), s/veh	2.9	0.0	1.0	0.4	0.0	1.1	0.9	10.3	9.9	0.9	40.1	39.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	1.5	0.6	0.0	1.0	0.7	6.3	6.5	0.7	11.8	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.0	0.0	21.8	23.2	0.0	24.5	27.3	30.4	30.1	27.3	61.5	61.2
LnGrp LOS	C		C	C		C	C	C	C	C	E	E
Approach Vol, veh/h		376			133			901			1058	
Approach Delay, s/veh		23.9			24.0			30.1			59.7	
Approach LOS		C			C			C			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	21.8		16.2	8.7	21.8		12.6				
Change Period (Y+Rc), s	4.6	* 5.4		4.6	4.6	5.4		4.6				
Max Green Setting (Gmax), s	7.0	* 17		28.4	7.0	16.4		9.0				
Max Q Clear Time (g_c+I1), s	3.7	14.8		9.5	3.7	18.4		4.8				
Green Ext Time (p_c), s	0.0	1.1		2.2	0.0	0.0		0.2				

Intersection Summary

HCM 6th Ctrl Delay, s/veh 41.5

HCM 6th LOS D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Intersection Delay, s/veh 12.6

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱		↰			↰	
Traffic Vol, veh/h	18	301	117	107	18	2	149	49	120	1	39	2
Future Vol, veh/h	18	301	117	107	18	2	149	49	120	1	39	2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles, %	0	2	5	3	0	0	1	0	0	0	0	0
Mvmt Flow	18	301	117	107	18	2	149	49	120	1	39	2
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	12.9	11.3	13.1	9.4
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	47%	6%	0%	86%	0%	2%
Vol Thru, %	15%	94%	0%	14%	0%	93%
Vol Right, %	38%	0%	100%	0%	100%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	318	319	117	125	2	42
LT Vol	149	18	0	107	0	1
Through Vol	49	301	0	18	0	39
RT Vol	120	0	117	0	2	2
Lane Flow Rate	318	319	117	125	2	42
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.471	0.511	0.165	0.23	0.003	0.069
Departure Headway (Hd)	5.333	5.768	5.065	6.61	5.411	5.952
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	674	625	709	544	661	601
Service Time	3.366	3.496	2.793	4.349	3.15	4
HCM Lane V/C Ratio	0.472	0.51	0.165	0.23	0.003	0.07
HCM Control Delay, s/veh	13.1	14.4	8.8	11.3	8.2	9.4
HCM Lane LOS	B	B	A	B	A	A
HCM 95th-tile Q	2.5	2.9	0.6	0.9	0	0.2

Intersection						
Int Delay, s/veh	8.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	76	745	70	66	606
Future Vol, veh/h	90	76	745	70	66	606
Conflicting Peds, #/hr	7	1	0	43	43	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	3	2	0	0	4
Mvmt Flow	90	76	745	70	66	606
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1568	824	0	0	858	0
Stage 1	823	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Critical Hdwy	6.42	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	122	371	-	-	791	-
Stage 1	431	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	102	357	-	-	763	-
Mov Cap-2 Maneuver	102	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	81.4	0	1			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 102 357	763	-		
HCM Lane V/C Ratio	-	- 0.882 0.213	0.087	-		
HCM Control Delay (s/veh)	-	- 135.1 17.8	10.2	0		
HCM Lane LOS	-	- F C	B	A		
HCM 95th %tile Q (veh)	-	- 5.1 0.8	0.3	-		

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	60	20	795	0	0	696
Future Vol, veh/h	60	20	795	0	0	696
Conflicting Peds, #/hr	22	0	0	54	54	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	60	20	795	0	0	696
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1165	795	0	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.6	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	203	391	-	0	0	-
Stage 1	448	-	-	0	0	-
Stage 2	675	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	199	391	-	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	663	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	29.2	0	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 227		-			
HCM Lane V/C Ratio	- 0.352		-			
HCM Control Delay (s/veh)	- 29.2		-			
HCM Lane LOS	- D		-			
HCM 95th %tile Q (veh)	- 1.5		-			

Gate Queuing Analysis – Existing Plus Approved Plus Project – AM Peak Hour

Run #	Maximum Gate Queue (Vehicles)
1	2
2	2
3	3
4	3
5	2
6	2
7	2
8	2
9	4
10	2
11	2
12	2
13	2
14	1
15	2
16	2
17	2
18	2
19	2
20	2
21	2
22	2
23	2
24	2
25	2
26	3
27	2
28	2
29	3
30	2
31	2
32	3
33	2
34	2
35	2
36	2
37	3
38	2
39	3
40	2
41	2
42	2
43	2
44	2
45	2

Run #	Maximum Gate Queue (Vehicles)
46	2
47	3
48	2
49	2
50	3
51	3
52	3
53	3
54	2
55	2
56	3
57	2
58	2
59	2
60	2
61	2
62	2
63	2
64	2
65	2
66	2
67	3
68	3
69	2
70	2
71	2
72	3
73	2
74	2
75	4
76	2
77	3
78	2
79	2
80	2
81	3
82	2
83	2
84	3
85	2
86	2
87	2
88	2
89	2
90	3

Run #	Maximum Gate Queue (Vehicles)
91	2
92	2
93	2
94	3
95	2
96	3
97	2
98	2
99	2
100	3
101	2
102	2
103	2
104	2
105	4
106	2
107	2
108	2
109	2
110	2
111	3
112	2
113	2
114	2
115	2
116	2
117	2
118	4
119	2
120	2
121	3
122	2
123	2
124	2
125	2
126	2
127	2
128	2
129	2
130	3
131	2
132	2
133	2
134	1
135	2

Run #	Maximum Gate Queue (Vehicles)
136	2
137	2
138	3
139	3
140	2
141	2
142	2
143	2
144	3
145	2
146	2
147	4
148	2
149	3
150	2
151	2
152	3
153	3
154	2
155	3
156	2
157	2
158	2
159	3
160	2
161	2
162	2
163	2
164	2
165	2
166	2
167	2
168	2
169	2
170	3
171	3
172	2
173	2
174	2
175	2
176	2
177	2
178	2
179	2
180	3

Run #	Maximum Gate Queue (Vehicles)
181	2
182	3
183	2
184	3
185	2
186	3
187	2
188	4
189	2
190	2
191	2
192	2
193	2
194	2
195	2
196	2
197	2
198	3
199	2
200	2
201	2
202	2
203	2
204	2
205	2
206	2
207	1
208	2
209	1
210	2
211	3
212	2
213	2
214	2
215	2
216	2
217	2
218	2
219	3
220	2
221	2
222	3
223	2
224	2
225	2

Run #	Maximum Gate Queue (Vehicles)
226	2
227	2
228	2
229	2
230	2
231	2
232	3
233	3
234	2
235	3
236	2
237	2
238	2
239	2
240	3
241	3
242	2
243	3
244	2
245	2
246	2
247	2
248	2
249	2
250	3
251	3
252	2
253	2
254	3
255	3
256	2
257	2
258	2
259	2
260	3
261	2
262	2
263	2
264	2
265	2
266	2
267	3
268	2
269	2
270	2

Run #	Maximum Gate Queue (Vehicles)
271	3
272	3
273	2
274	2
275	3
276	2
277	3
278	3
279	2
280	2
281	3
282	3
283	2
284	4
285	3
286	2
287	3
288	2
289	4
290	2
291	2
292	3
293	3
294	2
295	2
296	2
297	3
298	3
299	3
300	2
301	3
302	2
303	2
304	2
305	2
306	3
307	2
308	3
309	2
310	3
311	2
312	2
313	2
314	2
315	2

Run #	Maximum Gate Queue (Vehicles)
316	3
317	2
318	3
319	2
320	2
321	3
322	2
323	3
324	3
325	2
326	2
327	3
328	2
329	2
330	3
331	2
332	1
333	2
334	2
335	2
336	2
337	2
338	2
339	1
340	2
341	3
342	2
343	2
344	2
345	2
346	2
347	2
348	2
349	3
350	2
351	2
352	2
353	2
354	2
355	3
356	2
357	2
358	3
359	1
360	3

Run #	Maximum Gate Queue (Vehicles)
361	2
362	2
363	2
364	3
365	2
366	3
367	2
368	2
369	2
370	3
371	2
372	2
373	2
374	2
375	3
376	2
377	2
378	2
379	2
380	2
381	3
382	2
383	2
384	2
385	3
386	2
387	2
388	2
389	3
390	2
391	3
392	3
393	3
394	2
395	3
396	2
397	2
398	3
399	3
400	2
401	2
402	2
403	2
404	2
405	2

Run #	Maximum Gate Queue (Vehicles)
406	2
407	2
408	3
409	2
410	2
411	2
412	2
413	2
414	3
415	3
416	2
417	2
418	2
419	2
420	3
421	2
422	2
423	2
424	2
425	2
426	2
427	2
428	3
429	2
430	2
431	3
432	2
433	2
434	1
435	2
436	2
437	3
438	2
439	2
440	2
441	2
442	2
443	2
444	2
445	2
446	2
447	2
448	2
449	2
450	2

Run #	Maximum Gate Queue (Vehicles)
451	2
452	2
453	3
454	2
455	2
456	3
457	2
458	3
459	3
460	2
461	2
462	2
463	2
464	2
465	3
466	2
467	2
468	2
469	2
470	2
471	2
472	2
473	2
474	2
475	2
476	2
477	2
478	3
479	2
480	2
481	2
482	2
483	3
484	2
485	2
486	2
487	2
488	2
489	3
490	2
491	2
492	2
493	2
494	2
495	2

Run #	Maximum Gate Queue (Vehicles)
496	2
497	2
498	2
499	2
500	2
501	2
502	2
503	2
504	2
505	2
506	2
507	2
508	2
509	2
510	3
511	3
512	2
513	2
514	2
515	3
516	3
517	2
518	2
519	2
520	2
521	2
522	2
523	2
524	3
525	3
526	2
527	4
528	2
529	2
530	3
531	2
532	3
533	3
534	2
535	2
536	2
537	2
538	2
539	3
540	2

Run #	Maximum Gate Queue (Vehicles)
541	2
542	2
543	2
544	2
545	2
546	3
547	2
548	3
549	2
550	1
551	2
552	2
553	2
554	3
555	2
556	2
557	2
558	2
559	2
560	2
561	2
562	2
563	2
564	2
565	2
566	3
567	2
568	2
569	2
570	2
571	2
572	2
573	2
574	2
575	2
576	2
577	2
578	3
579	2
580	2
581	2
582	2
583	2
584	2
585	2

Run #	Maximum Gate Queue (Vehicles)
586	2
587	2
588	2
589	2
590	3
591	2
592	3
593	3
594	2
595	3
596	2
597	3
598	2
599	2
600	2
601	2
602	3
603	3
604	2
605	2
606	2
607	2
608	3
609	2
610	3
611	4
612	2
613	2
614	2
615	4
616	3
617	2
618	2
619	2
620	3
621	3
622	3
623	2
624	2
625	2
626	2
627	3
628	2
629	3
630	2

Run #	Maximum Gate Queue (Vehicles)
631	2
632	2
633	2
634	3
635	2
636	2
637	2
638	2
639	3
640	3
641	2
642	2
643	3
644	2
645	2
646	3
647	2
648	2
649	2
650	2
651	2
652	2
653	2
654	2
655	2
656	2
657	3
658	3
659	2
660	2
661	2
662	2
663	2
664	2
665	2
666	2
667	2
668	3
669	2
670	2
671	2
672	3
673	3
674	2
675	2

Run #	Maximum Gate Queue (Vehicles)
676	2
677	2
678	3
679	2
680	2
681	2
682	2
683	2
684	2
685	2
686	3
687	2
688	2
689	2
690	3
691	2
692	2
693	2
694	2
695	2
696	2
697	3
698	2
699	2
700	2
701	3
702	2
703	3
704	2
705	3
706	2
707	2
708	2
709	2
710	1
711	2
712	2
713	2
714	3
715	2
716	3
717	2
718	3
719	2
720	2

Run #	Maximum Gate Queue (Vehicles)
721	2
722	2
723	2
724	2
725	3
726	2
727	3
728	2
729	3
730	2
731	2
732	2
733	2
734	2
735	3
736	2
737	2
738	2
739	2
740	2
741	2
742	3
743	2
744	2
745	2
746	2
747	2
748	2
749	3
750	3
751	2
752	3
753	2
754	3
755	2
756	3
757	2
758	2
759	2
760	2
761	3
762	2
763	3
764	3
765	2

Run #	Maximum Gate Queue (Vehicles)
766	2
767	2
768	2
769	2
770	3
771	2
772	2
773	2
774	2
775	2
776	3
777	3
778	3
779	3
780	2
781	2
782	2
783	2
784	3
785	2
786	2
787	2
788	2
789	1
790	1
791	2
792	2
793	2
794	2
795	2
796	2
797	3
798	2
799	3
800	2
801	3
802	2
803	3
804	2
805	2
806	2
807	2
808	2
809	2
810	3

Run #	Maximum Gate Queue (Vehicles)
811	3
812	2
813	2
814	2
815	2
816	3
817	2
818	3
819	2
820	2
821	3
822	3
823	2
824	2
825	2
826	3
827	2
828	2
829	2
830	2
831	2
832	2
833	3
834	2
835	2
836	2
837	3
838	2
839	2
840	2
841	2
842	2
843	2
844	3
845	2
846	2
847	2
848	2
849	2
850	2
851	2
852	3
853	3
854	3
855	2

Run #	Maximum Gate Queue (Vehicles)
856	2
857	2
858	2
859	2
860	2
861	3
862	2
863	2
864	2
865	2
866	2
867	2
868	3
869	2
870	2
871	3
872	3
873	2
874	3
875	2
876	2
877	2
878	2
879	2
880	2
881	3
882	3
883	3
884	2
885	2
886	3
887	2
888	2
889	2
890	2
891	2
892	3
893	2
894	2
895	2
896	4
897	2
898	2
899	2
900	2

Run #	Maximum Gate Queue (Vehicles)
901	1
902	2
903	3
904	2
905	3
906	2
907	2
908	2
909	2
910	2
911	2
912	2
913	2
914	2
915	3
916	3
917	2
918	2
919	3
920	2
921	2
922	2
923	2
924	1
925	2
926	2
927	3
928	2
929	2
930	2
931	2
932	2
933	3
934	3
935	2
936	2
937	3
938	2
939	2
940	2
941	2
942	4
943	2
944	3
945	2

Run #	Maximum Gate Queue (Vehicles)
946	3
947	2
948	2
949	3
950	3
951	2
952	3
953	2
954	2
955	2
956	3
957	2
958	3
959	2
960	2
961	2
962	2
963	2
964	2
965	2
966	2
967	2
968	2
969	2
970	3
971	2
972	3
973	2
974	2
975	2
976	2
977	3
978	2
979	2
980	2
981	2
982	2
983	2
984	2
985	2
986	2
987	2
988	2
989	2
990	2

Run #	Maximum Gate Queue (Vehicles)
991	2
992	2
993	3
994	2
995	3
996	2
997	3
998	3
999	2
1000	2

Gate Queuing Analysis – Existing Plus Approved Plus Project – PM Peak Hour

Run #	Maximum Gate Queue (Vehicles)
1	3
2	2
3	4
4	3
5	3
6	3
7	3
8	3
9	3
10	3
11	3
12	2
13	3
14	2
15	3
16	2
17	2
18	3
19	3
20	4
21	3
22	3
23	3
24	2
25	4
26	4
27	2
28	3
29	3
30	3
31	2
32	3
33	5
34	2
35	3
36	2
37	2
38	2
39	4
40	2
41	3
42	3
43	3
44	2
45	3

Run #	Maximum Gate Queue (Vehicles)
46	2
47	3
48	4
49	3
50	3
51	2
52	3
53	2
54	2
55	3
56	3
57	2
58	3
59	2
60	3
61	3
62	3
63	4
64	3
65	3
66	2
67	3
68	3
69	2
70	2
71	3
72	3
73	2
74	3
75	3
76	3
77	2
78	3
79	3
80	2
81	4
82	2
83	3
84	2
85	3
86	2
87	2
88	3
89	5
90	3

Run #	Maximum Gate Queue (Vehicles)
91	3
92	4
93	2
94	3
95	3
96	3
97	2
98	3
99	3
100	3
101	4
102	2
103	3
104	4
105	4
106	3
107	3
108	3
109	5
110	2
111	3
112	3
113	2
114	2
115	2
116	3
117	2
118	4
119	2
120	3
121	3
122	3
123	3
124	3
125	4
126	2
127	4
128	3
129	4
130	2
131	2
132	4
133	3
134	3
135	3

Run #	Maximum Gate Queue (Vehicles)
136	4
137	2
138	3
139	3
140	2
141	3
142	2
143	2
144	3
145	4
146	2
147	3
148	2
149	3
150	3
151	3
152	3
153	4
154	3
155	4
156	3
157	2
158	3
159	3
160	3
161	2
162	3
163	4
164	4
165	3
166	3
167	4
168	3
169	4
170	3
171	4
172	2
173	3
174	3
175	2
176	3
177	3
178	3
179	3
180	4

Run #	Maximum Gate Queue (Vehicles)
181	3
182	3
183	3
184	3
185	3
186	2
187	2
188	3
189	3
190	3
191	3
192	3
193	3
194	3
195	3
196	3
197	4
198	3
199	2
200	3
201	3
202	3
203	3
204	3
205	3
206	3
207	3
208	3
209	2
210	2
211	3
212	3
213	2
214	2
215	3
216	2
217	3
218	3
219	2
220	3
221	3
222	3
223	3
224	3
225	3

Run #	Maximum Gate Queue (Vehicles)
226	3
227	2
228	3
229	3
230	2
231	3
232	3
233	3
234	2
235	3
236	3
237	2
238	2
239	3
240	3
241	3
242	3
243	3
244	4
245	2
246	3
247	2
248	2
249	3
250	3
251	3
252	3
253	3
254	3
255	2
256	2
257	2
258	3
259	3
260	2
261	2
262	3
263	3
264	3
265	4
266	2
267	2
268	3
269	3
270	3

Run #	Maximum Gate Queue (Vehicles)
271	2
272	3
273	3
274	4
275	3
276	4
277	3
278	3
279	3
280	3
281	3
282	3
283	3
284	3
285	3
286	2
287	2
288	2
289	3
290	3
291	3
292	3
293	3
294	3
295	2
296	2
297	2
298	2
299	3
300	3
301	4
302	3
303	3
304	2
305	3
306	2
307	3
308	2
309	4
310	2
311	3
312	3
313	3
314	5
315	3

Run #	Maximum Gate Queue (Vehicles)
316	3
317	3
318	3
319	3
320	5
321	3
322	3
323	3
324	3
325	3
326	3
327	2
328	4
329	2
330	2
331	3
332	3
333	3
334	3
335	3
336	3
337	2
338	3
339	2
340	3
341	3
342	3
343	2
344	2
345	3
346	4
347	4
348	3
349	2
350	3
351	3
352	2
353	3
354	4
355	2
356	2
357	2
358	3
359	3
360	3

Run #	Maximum Gate Queue (Vehicles)
361	3
362	2
363	3
364	3
365	4
366	3
367	3
368	3
369	3
370	3
371	3
372	3
373	4
374	2
375	2
376	3
377	3
378	3
379	2
380	4
381	3
382	4
383	2
384	3
385	3
386	2
387	3
388	4
389	2
390	4
391	3
392	3
393	3
394	3
395	3
396	2
397	2
398	2
399	3
400	3
401	3
402	3
403	3
404	2
405	4

Run #	Maximum Gate Queue (Vehicles)
406	3
407	3
408	2
409	4
410	3
411	3
412	2
413	3
414	3
415	2
416	3
417	2
418	2
419	2
420	2
421	2
422	2
423	2
424	3
425	3
426	3
427	3
428	3
429	2
430	3
431	3
432	3
433	3
434	3
435	3
436	2
437	2
438	2
439	3
440	3
441	3
442	3
443	4
444	3
445	3
446	5
447	3
448	2
449	2
450	3

Run #	Maximum Gate Queue (Vehicles)
451	2
452	2
453	3
454	3
455	3
456	2
457	3
458	2
459	3
460	3
461	2
462	3
463	3
464	3
465	3
466	3
467	3
468	4
469	3
470	3
471	2
472	4
473	3
474	3
475	3
476	4
477	2
478	2
479	3
480	3
481	4
482	3
483	3
484	3
485	3
486	3
487	2
488	4
489	2
490	3
491	3
492	3
493	2
494	4
495	3

Run #	Maximum Gate Queue (Vehicles)
496	2
497	3
498	4
499	3
500	3
501	5
502	3
503	3
504	3
505	3
506	3
507	3
508	4
509	3
510	3
511	2
512	3
513	2
514	3
515	3
516	3
517	3
518	3
519	3
520	3
521	3
522	2
523	2
524	2
525	3
526	2
527	3
528	3
529	3
530	3
531	3
532	3
533	3
534	2
535	4
536	3
537	2
538	3
539	4
540	4

Run #	Maximum Gate Queue (Vehicles)
541	3
542	3
543	3
544	3
545	3
546	3
547	3
548	3
549	2
550	3
551	2
552	3
553	3
554	3
555	2
556	2
557	3
558	3
559	2
560	3
561	2
562	3
563	3
564	2
565	2
566	2
567	4
568	3
569	3
570	2
571	2
572	3
573	2
574	3
575	3
576	3
577	2
578	3
579	2
580	3
581	3
582	2
583	3
584	3
585	3

Run #	Maximum Gate Queue (Vehicles)
586	3
587	2
588	3
589	3
590	3
591	5
592	3
593	3
594	4
595	3
596	3
597	3
598	4
599	3
600	3
601	3
602	4
603	2
604	2
605	4
606	3
607	3
608	3
609	4
610	4
611	3
612	3
613	3
614	3
615	3
616	3
617	3
618	3
619	3
620	2
621	3
622	3
623	3
624	2
625	4
626	3
627	3
628	3
629	2
630	3

Run #	Maximum Gate Queue (Vehicles)
631	3
632	3
633	3
634	2
635	3
636	3
637	2
638	2
639	4
640	4
641	3
642	4
643	4
644	4
645	2
646	3
647	3
648	3
649	3
650	2
651	3
652	3
653	4
654	2
655	2
656	3
657	3
658	2
659	2
660	3
661	3
662	3
663	3
664	3
665	3
666	3
667	3
668	3
669	2
670	3
671	2
672	3
673	2
674	3
675	3

Run #	Maximum Gate Queue (Vehicles)
676	3
677	3
678	3
679	3
680	3
681	3
682	3
683	4
684	2
685	2
686	3
687	4
688	3
689	3
690	3
691	4
692	3
693	3
694	4
695	3
696	3
697	3
698	2
699	4
700	3
701	3
702	2
703	2
704	4
705	3
706	4
707	4
708	2
709	3
710	3
711	3
712	4
713	2
714	4
715	3
716	2
717	4
718	3
719	4
720	3

Run #	Maximum Gate Queue (Vehicles)
721	2
722	3
723	2
724	3
725	2
726	3
727	2
728	2
729	2
730	2
731	3
732	3
733	3
734	2
735	3
736	3
737	4
738	3
739	2
740	3
741	3
742	3
743	4
744	2
745	2
746	4
747	3
748	3
749	3
750	3
751	4
752	3
753	3
754	3
755	4
756	3
757	3
758	3
759	3
760	2
761	4
762	3
763	3
764	2
765	3

Run #	Maximum Gate Queue (Vehicles)
766	2
767	3
768	5
769	3
770	3
771	2
772	4
773	4
774	4
775	2
776	3
777	4
778	3
779	3
780	4
781	4
782	3
783	3
784	3
785	4
786	4
787	3
788	3
789	2
790	3
791	2
792	3
793	4
794	2
795	3
796	3
797	3
798	2
799	2
800	3
801	2
802	3
803	3
804	2
805	2
806	3
807	3
808	3
809	4
810	3

Run #	Maximum Gate Queue (Vehicles)
811	2
812	2
813	3
814	3
815	3
816	2
817	3
818	3
819	2
820	2
821	3
822	3
823	2
824	3
825	3
826	4
827	3
828	3
829	3
830	3
831	3
832	3
833	2
834	2
835	3
836	3
837	3
838	3
839	2
840	4
841	3
842	3
843	3
844	2
845	3
846	4
847	3
848	3
849	2
850	3
851	3
852	3
853	3
854	4
855	3

Run #	Maximum Gate Queue (Vehicles)
856	2
857	2
858	4
859	3
860	2
861	4
862	3
863	3
864	4
865	4
866	2
867	4
868	3
869	4
870	2
871	2
872	3
873	5
874	2
875	3
876	3
877	2
878	3
879	4
880	3
881	3
882	3
883	3
884	3
885	3
886	4
887	3
888	4
889	3
890	4
891	2
892	3
893	3
894	2
895	4
896	3
897	3
898	3
899	3
900	3

Run #	Maximum Gate Queue (Vehicles)
901	3
902	4
903	4
904	3
905	3
906	3
907	3
908	3
909	3
910	3
911	3
912	3
913	3
914	3
915	3
916	3
917	5
918	3
919	2
920	2
921	2
922	2
923	3
924	2
925	2
926	2
927	3
928	3
929	3
930	4
931	3
932	3
933	3
934	3
935	4
936	3
937	2
938	3
939	3
940	3
941	3
942	4
943	3
944	4
945	3

Run #	Maximum Gate Queue (Vehicles)
946	3
947	3
948	4
949	2
950	3
951	2
952	3
953	2
954	4
955	2
956	3
957	2
958	2
959	3
960	4
961	2
962	4
963	3
964	3
965	4
966	3
967	3
968	4
969	3
970	3
971	2
972	3
973	3
974	4
975	3
976	3
977	2
978	4
979	2
980	2
981	3
982	3
983	5
984	3
985	2
986	3
987	3
988	3
989	4
990	3

Run #	Maximum Gate Queue (Vehicles)
991	2
992	2
993	4
994	4
995	4
996	3
997	2
998	3
999	3
1000	3

Gate Queuing Analysis – Cumulative Plus Project – PM Peak Hour

Run #	Maximum Gate Queue (Vehicles)
1	4
2	3
3	3
4	4
5	4
6	3
7	4
8	4
9	3
10	4
11	4
12	2
13	3
14	3
15	3
16	3
17	3
18	3
19	4
20	4
21	3
22	5
23	3
24	3
25	3
26	3
27	4
28	4
29	3
30	4
31	3
32	3
33	4
34	3
35	3
36	4
37	3
38	2
39	3
40	4
41	4
42	3
43	3
44	3
45	3

Run #	Maximum Gate Queue (Vehicles)
46	3
47	3
48	3
49	4
50	2
51	3
52	3
53	4
54	3
55	4
56	3
57	3
58	4
59	2
60	3
61	4
62	3
63	5
64	2
65	3
66	3
67	4
68	3
69	4
70	5
71	5
72	4
73	3
74	3
75	3
76	4
77	3
78	3
79	4
80	4
81	3
82	3
83	3
84	3
85	4
86	3
87	3
88	4
89	5
90	4

Run #	Maximum Gate Queue (Vehicles)
91	4
92	3
93	4
94	3
95	5
96	3
97	3
98	3
99	4
100	3
101	3
102	4
103	4
104	3
105	4
106	3
107	3
108	3
109	3
110	3
111	4
112	3
113	4
114	4
115	3
116	3
117	3
118	3
119	3
120	2
121	3
122	3
123	3
124	3
125	3
126	3
127	3
128	4
129	3
130	3
131	3
132	3
133	3
134	4
135	4

Run #	Maximum Gate Queue (Vehicles)
136	3
137	3
138	4
139	3
140	3
141	4
142	3
143	3
144	3
145	3
146	2
147	3
148	3
149	4
150	4
151	3
152	4
153	2
154	4
155	3
156	3
157	3
158	3
159	3
160	4
161	4
162	3
163	4
164	3
165	4
166	3
167	3
168	3
169	3
170	2
171	3
172	3
173	3
174	4
175	3
176	2
177	5
178	4
179	4
180	3

Run #	Maximum Gate Queue (Vehicles)
181	4
182	4
183	3
184	3
185	2
186	4
187	4
188	4
189	4
190	3
191	3
192	4
193	3
194	3
195	3
196	3
197	3
198	3
199	3
200	3
201	3
202	3
203	5
204	3
205	3
206	3
207	3
208	3
209	3
210	4
211	3
212	4
213	4
214	5
215	3
216	4
217	3
218	5
219	3
220	4
221	3
222	3
223	2
224	3
225	3

Run #	Maximum Gate Queue (Vehicles)
226	3
227	4
228	3
229	3
230	3
231	4
232	5
233	3
234	3
235	3
236	3
237	3
238	2
239	5
240	3
241	3
242	3
243	4
244	3
245	3
246	2
247	4
248	4
249	3
250	3
251	4
252	3
253	3
254	3
255	3
256	4
257	3
258	3
259	3
260	3
261	4
262	4
263	3
264	4
265	3
266	4
267	3
268	4
269	4
270	4

Run #	Maximum Gate Queue (Vehicles)
271	4
272	3
273	4
274	4
275	3
276	3
277	3
278	3
279	3
280	3
281	3
282	3
283	4
284	3
285	4
286	3
287	3
288	3
289	4
290	3
291	5
292	4
293	4
294	5
295	3
296	3
297	4
298	4
299	4
300	3
301	4
302	3
303	3
304	3
305	4
306	3
307	5
308	3
309	4
310	4
311	3
312	3
313	4
314	3
315	4

Run #	Maximum Gate Queue (Vehicles)
316	3
317	4
318	5
319	3
320	3
321	4
322	3
323	4
324	3
325	4
326	3
327	3
328	3
329	3
330	3
331	4
332	3
333	3
334	3
335	3
336	3
337	4
338	3
339	4
340	3
341	3
342	4
343	3
344	3
345	3
346	3
347	3
348	3
349	3
350	3
351	3
352	3
353	4
354	3
355	4
356	3
357	3
358	3
359	3
360	4

Run #	Maximum Gate Queue (Vehicles)
361	4
362	4
363	3
364	3
365	3
366	3
367	4
368	3
369	4
370	3
371	5
372	3
373	3
374	3
375	3
376	4
377	3
378	3
379	3
380	3
381	3
382	3
383	3
384	3
385	3
386	4
387	3
388	4
389	3
390	3
391	3
392	4
393	3
394	4
395	3
396	4
397	3
398	3
399	3
400	3
401	3
402	2
403	4
404	4
405	4

Run #	Maximum Gate Queue (Vehicles)
406	4
407	3
408	4
409	3
410	3
411	3
412	2
413	3
414	2
415	4
416	3
417	4
418	3
419	4
420	3
421	2
422	4
423	5
424	3
425	3
426	3
427	3
428	3
429	3
430	4
431	4
432	3
433	3
434	3
435	3
436	3
437	5
438	3
439	4
440	3
441	2
442	3
443	4
444	3
445	3
446	3
447	4
448	3
449	3
450	4

Run #	Maximum Gate Queue (Vehicles)
451	3
452	3
453	3
454	5
455	4
456	4
457	3
458	3
459	4
460	3
461	3
462	3
463	4
464	3
465	3
466	3
467	4
468	3
469	3
470	3
471	3
472	4
473	3
474	3
475	3
476	4
477	4
478	3
479	4
480	3
481	3
482	3
483	3
484	6
485	4
486	5
487	5
488	3
489	4
490	4
491	5
492	3
493	3
494	3
495	4

Run #	Maximum Gate Queue (Vehicles)
496	3
497	4
498	5
499	3
500	3
501	4
502	3
503	3
504	3
505	3
506	3
507	3
508	4
509	4
510	4
511	3
512	4
513	4
514	3
515	3
516	3
517	2
518	3
519	4
520	3
521	5
522	3
523	4
524	3
525	3
526	4
527	3
528	4
529	3
530	3
531	4
532	3
533	2
534	3
535	3
536	3
537	3
538	3
539	3
540	3

Run #	Maximum Gate Queue (Vehicles)
541	5
542	3
543	3
544	4
545	3
546	3
547	3
548	4
549	4
550	4
551	3
552	3
553	3
554	2
555	3
556	3
557	4
558	5
559	3
560	3
561	3
562	3
563	4
564	3
565	3
566	3
567	3
568	4
569	3
570	3
571	3
572	4
573	4
574	4
575	5
576	3
577	4
578	3
579	3
580	3
581	3
582	3
583	3
584	3
585	3

Run #	Maximum Gate Queue (Vehicles)
586	4
587	3
588	3
589	4
590	3
591	3
592	4
593	3
594	4
595	4
596	3
597	3
598	4
599	3
600	4
601	4
602	3
603	3
604	4
605	3
606	3
607	2
608	3
609	3
610	7
611	3
612	4
613	3
614	5
615	3
616	5
617	5
618	3
619	4
620	3
621	3
622	4
623	5
624	3
625	3
626	3
627	4
628	3
629	3
630	3

Run #	Maximum Gate Queue (Vehicles)
631	4
632	3
633	3
634	4
635	3
636	3
637	4
638	3
639	4
640	4
641	3
642	3
643	3
644	3
645	4
646	4
647	3
648	3
649	3
650	4
651	3
652	5
653	3
654	3
655	3
656	3
657	3
658	3
659	3
660	5
661	3
662	3
663	4
664	3
665	3
666	3
667	3
668	3
669	3
670	3
671	3
672	3
673	3
674	3
675	4

Run #	Maximum Gate Queue (Vehicles)
676	4
677	4
678	3
679	4
680	3
681	3
682	4
683	3
684	3
685	3
686	3
687	3
688	4
689	3
690	2
691	4
692	3
693	4
694	4
695	3
696	3
697	3
698	3
699	4
700	4
701	4
702	3
703	3
704	3
705	3
706	3
707	3
708	3
709	3
710	5
711	3
712	3
713	3
714	4
715	3
716	3
717	2
718	3
719	4
720	4

Run #	Maximum Gate Queue (Vehicles)
721	3
722	3
723	5
724	3
725	3
726	4
727	3
728	3
729	4
730	4
731	3
732	4
733	5
734	4
735	3
736	3
737	3
738	6
739	3
740	3
741	3
742	3
743	4
744	3
745	3
746	2
747	3
748	3
749	5
750	3
751	3
752	3
753	3
754	4
755	2
756	3
757	3
758	4
759	2
760	3
761	4
762	2
763	3
764	3
765	3

Run #	Maximum Gate Queue (Vehicles)
766	4
767	3
768	4
769	2
770	3
771	3
772	3
773	3
774	3
775	3
776	2
777	3
778	3
779	3
780	3
781	3
782	3
783	4
784	3
785	3
786	3
787	3
788	4
789	3
790	3
791	3
792	3
793	4
794	3
795	3
796	3
797	2
798	5
799	3
800	3
801	4
802	3
803	3
804	3
805	2
806	3
807	3
808	3
809	5
810	3

Run #	Maximum Gate Queue (Vehicles)
811	3
812	3
813	3
814	4
815	4
816	4
817	7
818	5
819	3
820	4
821	4
822	3
823	4
824	4
825	3
826	3
827	3
828	3
829	3
830	3
831	4
832	4
833	4
834	4
835	4
836	4
837	3
838	4
839	2
840	3
841	3
842	4
843	4
844	4
845	3
846	3
847	3
848	3
849	4
850	5
851	3
852	3
853	4
854	3
855	3

Run #	Maximum Gate Queue (Vehicles)
856	4
857	2
858	2
859	3
860	3
861	4
862	2
863	4
864	3
865	3
866	3
867	4
868	4
869	3
870	4
871	3
872	5
873	5
874	3
875	3
876	3
877	4
878	4
879	2
880	3
881	3
882	2
883	3
884	4
885	5
886	5
887	2
888	4
889	4
890	3
891	3
892	3
893	3
894	6
895	2
896	3
897	3
898	3
899	3
900	3

Run #	Maximum Gate Queue (Vehicles)
901	3
902	3
903	3
904	5
905	3
906	4
907	4
908	3
909	4
910	3
911	5
912	3
913	4
914	3
915	4
916	4
917	3
918	3
919	3
920	4
921	3
922	3
923	3
924	3
925	3
926	3
927	5
928	3
929	3
930	3
931	3
932	2
933	3
934	4
935	4
936	4
937	3
938	3
939	4
940	5
941	4
942	3
943	3
944	4
945	3

Run #	Maximum Gate Queue (Vehicles)
946	3
947	3
948	3
949	3
950	3
951	4
952	3
953	2
954	3
955	4
956	3
957	4
958	3
959	3
960	3
961	2
962	4
963	5
964	4
965	3
966	3
967	3
968	3
969	3
970	5
971	3
972	3
973	3
974	4
975	3
976	3
977	4
978	2
979	3
980	4
981	3
982	3
983	3
984	3
985	3
986	4
987	3
988	3
989	3
990	3

Run #	Maximum Gate Queue (Vehicles)
991	3
992	3
993	3
994	3
995	3
996	3
997	4
998	4
999	3
1000	3

Gate Queuing Analysis – Worst Case Scenario (225 Vehicles)

Run #	Maximum Gate Queue (Vehicles)
1	9
2	10
3	9
4	7
5	10
6	9
7	10
8	7
9	8
10	11
11	7
12	6
13	8
14	10
15	5
16	9
17	7
18	13
19	9
20	8
21	8
22	7
23	5
24	7
25	9
26	8
27	19
28	12
29	10
30	7
31	8
32	7
33	8
34	8
35	11
36	7
37	6
38	8
39	6
40	7
41	10
42	9
43	7
44	8
45	8

Run #	Maximum Gate Queue (Vehicles)
46	5
47	8
48	10
49	8
50	6
51	8
52	7
53	7
54	7
55	7
56	9
57	8
58	16
59	10
60	7
61	9
62	5
63	10
64	7
65	8
66	11
67	8
68	8
69	5
70	11
71	6
72	8
73	7
74	11
75	12
76	7
77	9
78	14
79	5
80	11
81	9
82	7
83	7
84	6
85	8
86	6
87	9
88	12
89	7
90	7

Run #	Maximum Gate Queue (Vehicles)
91	11
92	7
93	12
94	5
95	9
96	8
97	8
98	6
99	23
100	8
101	12
102	5
103	9
104	7
105	9
106	7
107	5
108	9
109	9
110	8
111	10
112	8
113	8
114	9
115	12
116	6
117	20
118	6
119	7
120	11
121	8
122	10
123	12
124	14
125	10
126	8
127	10
128	7
129	11
130	8
131	7
132	5
133	6
134	11
135	5

Run #	Maximum Gate Queue (Vehicles)
136	12
137	9
138	5
139	9
140	10
141	8
142	9
143	8
144	8
145	9
146	10
147	9
148	9
149	11
150	7
151	9
152	13
153	9
154	10
155	10
156	9
157	6
158	10
159	6
160	12
161	11
162	13
163	7
164	8
165	8
166	7
167	10
168	11
169	9
170	12
171	6
172	12
173	8
174	6
175	7
176	6
177	13
178	10
179	11
180	8

Run #	Maximum Gate Queue (Vehicles)
181	6
182	10
183	8
184	8
185	9
186	11
187	6
188	8
189	8
190	10
191	11
192	9
193	8
194	9
195	8
196	10
197	8
198	8
199	8
200	8
201	7
202	8
203	12
204	7
205	7
206	10
207	6
208	8
209	8
210	7
211	6
212	6
213	9
214	8
215	8
216	9
217	6
218	7
219	10
220	6
221	6
222	7
223	13
224	13
225	9

Run #	Maximum Gate Queue (Vehicles)
226	6
227	11
228	6
229	7
230	7
231	9
232	6
233	8
234	11
235	6
236	10
237	8
238	10
239	9
240	8
241	9
242	8
243	10
244	9
245	11
246	9
247	5
248	8
249	8
250	7
251	11
252	8
253	5
254	7
255	8
256	9
257	8
258	12
259	8
260	13
261	12
262	6
263	8
264	14
265	7
266	10
267	9
268	9
269	8
270	5

Run #	Maximum Gate Queue (Vehicles)
271	5
272	5
273	15
274	7
275	11
276	10
277	8
278	7
279	8
280	9
281	10
282	6
283	5
284	6
285	9
286	6
287	8
288	7
289	8
290	9
291	12
292	9
293	16
294	8
295	10
296	8
297	7
298	9
299	6
300	8
301	8
302	8
303	10
304	10
305	12
306	8
307	8
308	7
309	9
310	8
311	7
312	12
313	7
314	7
315	8

Run #	Maximum Gate Queue (Vehicles)
316	5
317	7
318	10
319	8
320	11
321	8
322	6
323	7
324	6
325	8
326	10
327	13
328	8
329	10
330	7
331	11
332	9
333	8
334	8
335	7
336	9
337	9
338	7
339	15
340	12
341	12
342	8
343	11
344	8
345	8
346	9
347	6
348	8
349	15
350	15
351	9
352	11
353	9
354	8
355	8
356	7
357	6
358	10
359	15
360	6

Run #	Maximum Gate Queue (Vehicles)
361	8
362	8
363	9
364	7
365	10
366	13
367	9
368	12
369	8
370	9
371	6
372	7
373	11
374	12
375	7
376	7
377	6
378	7
379	8
380	11
381	8
382	9
383	9
384	8
385	6
386	12
387	9
388	10
389	9
390	10
391	10
392	10
393	9
394	9
395	5
396	10
397	8
398	6
399	7
400	6
401	10
402	7
403	9
404	13
405	7

Run #	Maximum Gate Queue (Vehicles)
406	7
407	8
408	9
409	7
410	9
411	6
412	10
413	10
414	11
415	10
416	10
417	7
418	14
419	7
420	16
421	11
422	7
423	9
424	5
425	16
426	9
427	9
428	8
429	12
430	9
431	9
432	7
433	9
434	8
435	7
436	7
437	7
438	14
439	6
440	14
441	6
442	9
443	7
444	13
445	9
446	11
447	5
448	10
449	15
450	7

Run #	Maximum Gate Queue (Vehicles)
451	11
452	6
453	6
454	10
455	6
456	6
457	6
458	6
459	9
460	11
461	8
462	15
463	9
464	7
465	8
466	7
467	8
468	8
469	7
470	6
471	10
472	8
473	10
474	9
475	6
476	11
477	10
478	7
479	7
480	8
481	6
482	8
483	12
484	8
485	8
486	8
487	7
488	10
489	8
490	10
491	7
492	9
493	10
494	10
495	9

Run #	Maximum Gate Queue (Vehicles)
496	10
497	8
498	7
499	7
500	12
501	7
502	10
503	7
504	9
505	8
506	6
507	6
508	8
509	7
510	15
511	7
512	10
513	5
514	5
515	10
516	10
517	10
518	7
519	9
520	8
521	10
522	8
523	6
524	8
525	10
526	7
527	10
528	7
529	11
530	8
531	9
532	5
533	8
534	8
535	7
536	7
537	8
538	10
539	9
540	11

Run #	Maximum Gate Queue (Vehicles)
541	5
542	11
543	7
544	7
545	7
546	7
547	8
548	14
549	6
550	6
551	8
552	11
553	6
554	11
555	10
556	9
557	11
558	13
559	7
560	8
561	8
562	7
563	9
564	9
565	7
566	9
567	8
568	10
569	10
570	15
571	14
572	8
573	12
574	11
575	6
576	9
577	7
578	7
579	8
580	11
581	6
582	11
583	11
584	7
585	6

Run #	Maximum Gate Queue (Vehicles)
586	9
587	10
588	9
589	13
590	7
591	7
592	7
593	6
594	10
595	6
596	8
597	8
598	13
599	7
600	9
601	9
602	14
603	9
604	8
605	9
606	7
607	9
608	14
609	11
610	9
611	10
612	9
613	6
614	10
615	6
616	13
617	10
618	11
619	11
620	6
621	8
622	10
623	7
624	11
625	8
626	7
627	11
628	11
629	9
630	8

Run #	Maximum Gate Queue (Vehicles)
631	11
632	12
633	9
634	8
635	9
636	8
637	10
638	8
639	9
640	10
641	6
642	9
643	10
644	10
645	8
646	6
647	7
648	6
649	8
650	11
651	7
652	13
653	12
654	19
655	9
656	9
657	9
658	7
659	11
660	8
661	6
662	6
663	5
664	7
665	6
666	8
667	9
668	13
669	8
670	8
671	7
672	7
673	7
674	9
675	7

Run #	Maximum Gate Queue (Vehicles)
676	11
677	8
678	11
679	8
680	9
681	10
682	9
683	9
684	9
685	11
686	6
687	8
688	10
689	6
690	6
691	8
692	9
693	6
694	9
695	9
696	13
697	9
698	8
699	11
700	6
701	8
702	7
703	5
704	6
705	16
706	6
707	9
708	11
709	8
710	9
711	13
712	8
713	6
714	8
715	10
716	10
717	8
718	9
719	10
720	8

Run #	Maximum Gate Queue (Vehicles)
721	7
722	8
723	6
724	9
725	4
726	8
727	8
728	5
729	10
730	7
731	8
732	8
733	8
734	10
735	9
736	9
737	8
738	13
739	9
740	7
741	10
742	7
743	10
744	8
745	9
746	8
747	11
748	6
749	9
750	10
751	13
752	11
753	7
754	6
755	11
756	10
757	9
758	10
759	11
760	9
761	6
762	6
763	10
764	9
765	8

Run #	Maximum Gate Queue (Vehicles)
766	11
767	10
768	9
769	8
770	13
771	8
772	13
773	13
774	11
775	10
776	14
777	6
778	7
779	6
780	12
781	8
782	7
783	9
784	6
785	6
786	6
787	7
788	8
789	8
790	11
791	9
792	10
793	7
794	7
795	8
796	9
797	9
798	11
799	9
800	7
801	10
802	8
803	8
804	8
805	9
806	7
807	11
808	8
809	9
810	16

Run #	Maximum Gate Queue (Vehicles)
811	10
812	7
813	14
814	10
815	7
816	9
817	6
818	15
819	6
820	8
821	8
822	11
823	8
824	8
825	12
826	7
827	8
828	9
829	7
830	8
831	30
832	7
833	8
834	12
835	6
836	8
837	8
838	14
839	9
840	8
841	9
842	9
843	13
844	7
845	11
846	11
847	8
848	8
849	12
850	11
851	9
852	8
853	7
854	6
855	16

Run #	Maximum Gate Queue (Vehicles)
856	11
857	9
858	6
859	7
860	7
861	16
862	14
863	8
864	9
865	9
866	8
867	5
868	9
869	10
870	7
871	12
872	5
873	8
874	8
875	7
876	8
877	6
878	10
879	7
880	8
881	8
882	8
883	10
884	9
885	12
886	6
887	14
888	7
889	9
890	11
891	13
892	9
893	7
894	6
895	8
896	15
897	6
898	10
899	9
900	6

Run #	Maximum Gate Queue (Vehicles)
901	8
902	6
903	16
904	8
905	8
906	5
907	13
908	8
909	11
910	7
911	11
912	10
913	5
914	8
915	8
916	7
917	14
918	7
919	12
920	11
921	8
922	8
923	9
924	6
925	9
926	9
927	9
928	11
929	10
930	17
931	9
932	8
933	12
934	7
935	12
936	8
937	7
938	13
939	7
940	10
941	8
942	14
943	6
944	12
945	7

Run #	Maximum Gate Queue (Vehicles)
946	7
947	7
948	7
949	10
950	9
951	10
952	7
953	10
954	11
955	10
956	11
957	7
958	11
959	9
960	10
961	9
962	8
963	11
964	8
965	7
966	7
967	9
968	7
969	6
970	15
971	6
972	7
973	9
974	9
975	10
976	8
977	16
978	8
979	10
980	8
981	13
982	7
983	7
984	7
985	5
986	11
987	6
988	7
989	12
990	9

Run #	Maximum Gate Queue (Vehicles)
991	7
992	9
993	10
994	10
995	16
996	12
997	18
998	8
999	8
1000	8

Appendix N
Parking Evaluation

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Block C2		Land Use Program				Parking Rate			Parking Supply/Demand (ITE)																																		Time of Day Demand (ITE)																							
Scenarios		Type	Size	Unit	ITE Code	Demand Rate	Unit	ITE Max Peak Demand	Parking Type	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM																					
Monday-Thursday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	138	DU	221	1.23	DU	170	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	170	170	170	170	170	163	146	131	113	102	97	94	89	85	89	87	97	106	111	116	128	140	148	155									
		Strip Retail Plaza (<40k)	2.60	KSF	822	2.79	KSF	7	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	-	-	-	2	3	4	4	7	8	6	6	4	4	-	-												
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2.60	KSF	932	8.97	KSF	23	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	170	170	170	170	170	163	146	131	115	105	101	98	96	93	95	93	102	112	117	122	132	144	148	155							
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	313	DU	221	1.23	DU	385	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	170	170	170	170	170	163	146	131	115	105	101	98	96	93	95	93	102	112	117	122	132	144	148	155									
		Strip Retail Plaza (<40k)	9.00	KSF	822	2.79	KSF	25	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	-	-	-	5	9	12	14	23	26	19	19	17	18	19	18	14	13	-	-								
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	9.00	KSF	932	8.97	KSF	81	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	170	170	170	170	170	163	146	131	115	105	101	98	96	93	95	93	102	112	117	122	132	144	148	155							
Friday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	138	DU	221	1.23	DU	170	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	170	170	170	170	170	163	146	131	113	102	97	94	89	85	89	87	97	106	111	116	128	140	148	155									
		Strip Retail Plaza (<40k)	2.60	KSF	822	3.13	KSF	8	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	0%	-	-	-	-	-	-	-	-	2	4	4	5	8	8	7	5	5	6	4	9	8	6	-	-							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2.60	KSF	932	14.27	KSF	37	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	170	170	170	170	170	163	146	131	115	106	101	99	97	93	96	92	102	112	115	125	136	146	148	155							
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	313	DU	221	1.23	DU	385	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	170	170	170	170	170	163	146	131	115	106	101	99	97	93	96	92	102	112	115	125	136	146	148	155									
		Strip Retail Plaza (<40k)	9.00	KSF	822	3.13	KSF	28	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	0%	-	-	-	-	-	-	-	-	6	12	13	15	28	28	24	15	15	18	14	29	27	21	-	-							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	9.00	KSF	932	14.27	KSF	128	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	-	-	-	-	-	-	-	-	-	-	36	124	129	66	48	44	72	112	117	94	-	-	-								
Saturday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	138	DU	221	1.04	DU	144	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	144	144	144	144	144	138	124	111	95	87	82	79	74	72	75	74	82	89	94	98	108	118	125	131									
		Strip Retail Plaza (<40k)	2.60	KSF	822	2.77	KSF	7	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0%	-	-	-	-	-	-	-	-	-	-	3	4	5	7	8	7	6	5	5	6	6	4	-	-								
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2.60	KSF	932	11.53	KSF	30	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	-	-	-	-	-	-	-	-	-	-	10	17	21	18	15	19	24	30	30	26	17	11	-									
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	313	DU	221	1.04	DU	326	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	326	326	326	326	326	326	313	280	251	215	196	186	180	170	163	170	167	186	202	212	222	245	267	284	297								
		Strip Retail Plaza (<40k)	9.00	KSF	822	2.77	KSF	25	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0%	-	-	-	-	-	-	-	-	-	6	12	13	15	28	28	24	15	15	18	14	29	27	21	-	-						
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	9.00	KSF	932	11.53	KSF	104	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	-	-	-	-	-	-	-	-	-	-	35	59	72	61	51	66	80	104	104	89	58	37	-									
								454																									326	326	326	326	326	326	313	280	251	215	206	200	197	192	188	194	187	203	218	229	240	263	280	284	297									

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Block E		Land Use Program						Parking Rate			Parking Supply/Demand (ITE)																																				Time of Day Demand (ITE)																																																																																																																																																																																																																																																																																																																																																																
Scenarios	Type	Size	Unit	ITE Code	Demand	Unit	ITE Max Peak Demand	Parking Type	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM																																																																																																																																																																																																																																																																																																																																																							
Monday-Thursday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	178	DU	221	1.23	DU	219	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	219	219	219	219	219	211	189	169	145	132	125	121	114	110	114	112	9	8	136	143	149	165	180	6	191	200																																																																																																																																																																																																																																																																																																																																																				
		Strip Retail Plaza (<40k)	4.20	KSF	822	2.79	KSF	38	12	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0	-	-	-	-	-	3	4	6	7	11	12	9	9	8	9	9	7	7	6	-	-																																																																																																																																																																																																																																																																																																																																																							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	4.20	KSF	932	8.97	KSF	38	38	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0	-	-	-	-	-	-	3	4	6	7	11	12	9	9	8	9	9	7	7	6	-	-																																																																																																																																																																																																																																																																																																																																																				
	1060 du	Multifamily Housing - 2+ BR (Mid-Rise)	163	DU	221	1.23	DU	201	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	202	202	202	202	202	194	173	155	133	121	115	111	105	101	105	103	115	125	131	137	151	165	175	183																																																																																																																																																																																																																																																																																																																																																						
		Strip Retail Plaza (<40k)	4.15	KSF	822	2.79	KSF	12	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0	-	-	-	-	-	-	3	4	6	7	11	12	9	9	8	9	9	7	7	6	-	-																																																																																																																																																																																																																																																																																																																																																							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	4.15	KSF	932	8.97	KSF	37	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0	-	-	-	-	-	-	-	3	4	6	7	11	12	9	9	8	9	9	7	7	6	-	-																																																																																																																																																																																																																																																																																																																																																			
Friday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	178	DU	221	1.23	DU	219	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	202	202	202	202	202	194	173	155	136	125	121	111	105	101	114	112	123	134	144	148	156	171	175	183																																																																																																																																																																																																																																																																																																																																																						
		Strip Retail Plaza (<40k)	4.20	KSF	822	3.13	KSF	13	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	0%	0	-	-	-	-	-	-	3	6	6	7	13	13	12	7	7	9	7	14	13	10	-	-																																																																																																																																																																																																																																																																																																																																																						
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	4.20	KSF	932	14.27	KSF	39	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0	-	-	-	-	-	-	3	6	6	7	13	13	12	7	7	9	7	14	13	10	-	-																																																																																																																																																																																																																																																																																																																																																				
	1060 du	Multifamily Housing - 2+ BR (Mid-Rise)	163	DU	221	1.23	DU	201	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	202	202	202	202	202	194	173	155	138	121	115	111	105	101	105	103	115	125	131	137	151	165	175	183																																																																																																																																																																																																																																																																																																																																																						
		Strip Retail Plaza (<40k)	4.15	KSF	822	3.13	KSF	13	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0	-	-	-	-	-	-	3	6	6	7	13	13	12	7	7	9	7	13	13	10	-	-																																																																																																																																																																																																																																																																																																																																																								
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	4.15	KSF	932	14.27	KSF	59	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0	-	-	-	-	-	-	3	6	6	7	13	13	12	7	7	9	7	14	13	10	-	-																																																																																																																																																																																																																																																																																																																																																			
Saturday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	178	DU	221	1.04	DU	185	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	186	186	186	186	186	178	160	143	123	112	106	102	97	93	89	85	80	115	121	126	139	152	162	169																																																																																																																																																																																																																																																																																																																																																						
		Strip Retail Plaza (<40k)	4.20	KSF	822	2.77	KSF	12	Shared	0%	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0	-	-	-	-	-	-	5	7	8	10	12	12	10	8	12	9	9	8	8	7	6	-	-																																																																																																																																																																																																																																																																																																																																																							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	4.20	KSF	932	11.53	KSF	48	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	0	-	-	-	-	-	-	-	-	-	16	28	34	29	24	31	38	49	42	27	17	17	-	-																																																																																																																																																																																																																																																																																																																																																						
	1060 du	Multifamily Housing - 2+ BR (Mid-Rise)	163	DU	221	1.04	DU	170	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	186	186	186	186	178	160	143	123	117	113	110	107	105	109	105	114	123	129	135	148	158	162	169																																																																																																																																																																																																																																																																																																																																																							
		Strip Retail Plaza (<40k)	4.20	KSF	822	1.77	KSF	11	Shared	0%	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0	-	-	-	-	-	5	7	8	10	12	12	10	8	12	9	9	8	8	7	6	-	-																																																																																																																																																																																																																																																																																																																																																								
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	4.15	KSF	932	11.53	KSF	48	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	0	-	-	-	-	-	-	16	27	34	28	24	31	37	48	48	41	27	17	17	-	-																																																																																																																																																																																																																																																																																																																																																								
229								171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171</

Block F		Land Use Program				Parking Rate		Parking Supply/Demand (ITE)		Time of Day Demand (ITE)																																																				
Scenarios	Type	Size	Unit	ITE Code	Demand Rate	Unit	ITE Max Peak Demand	Parking Type	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 PM	11:00 PM																		
Monday-Thursday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	70	DU	221	1.23	DU	86	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	87	87	87	87	87	83	75	67	57	52	50	48	45	44	45	44	50	54	56	65	71	75	79						
		Strip Retail Plaza (<40k)	1.60	KSF	822	2.79	KSF	4	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	67	57	1	2	3	3	4	5	4	4	4	3	3	-	-	-							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.60	KSF	932	8.97	KSF	14	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	34%	56%	87%	91%	73%	0%	0%	0%	0%	87	87	87	87	87	83	75	67	58	54	53	51	49	49	48	53	58	60	63	68	74	75	79				
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	64	DU	221	1.23	DU	79	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	79	79	79	79	79	76	68	61	52	48	45	44	41	40	41	41	45	49	52	54	59	65	69	72					
		Strip Retail Plaza (<40k)	1.60	KSF	822	2.79	KSF	5	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	-	67	57	1	2	3	3	4	5	6	4	4	4	3	3	-	-	-					
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.80	KSF	932	8.97	KSF	16	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	79	79	79	79	79	76	68	61	53	50	48	47	46	45	45	49	52	56	58	62	66	69	72					
Friday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	70	DU	221	1.23	DU	86	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	87	87	87	87	87	83	75	67	57	52	50	48	45	44	45	44	50	54	56	65	71	75	79						
		Strip Retail Plaza (<40k)	1.60	KSF	822	3.13	KSF	5	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	-	-	-	-	-	-	1	3	3	3	5	5	5	4	3	3	4	3	6	5	4	-	-	-				
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.60	KSF	932	14.27	KSF	23	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	79	79	79	79	79	76	68	61	53	50	48	47	46	45	45	49	52	56	58	62	66	69	72					
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	64	DU	221	1.23	DU	79	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	87	87	87	87	87	83	75	67	57	52	50	48	45	44	41	40	41	41	45	49	52	54	59	65	69	72			
		Strip Retail Plaza (<40k)	1.60	KSF	822	3.13	KSF	6	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	-	-	-	-	-	-	2	3	3	3	5	5	5	4	3	3	4	3	6	5	-	-	-					
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.80	KSF	932	14.27	KSF	26	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	79	79	79	79	79	76	68	61	54	51	48	47	46	45	45	49	52	56	58	62	66	69	72					
Saturday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	70	DU	221	1.04	DU	73	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	73	73	73	73	73	70	63	57	49	44	42	41	47	46	46	48	53	55	60	64	67	69	72						
		Strip Retail Plaza (<40k)	1.60	KSF	822	2.77	KSF	4	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	-	-	-	-	-	-	-	73	73	73	73	73	70	63	57	49	44	42	41	47	46	46	48	53	55	60	64	67
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.60	KSF	932	11.53	KSF	18	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	85%	55%	35%	0%	0%	0%	-	-	-	-	-	-	-	-	-	7	11	13	11	10	12	15	19	14	16	11	7	-	-	-				
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	64	DU	221	1.04	DU	67	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	67	67	67	67	67	64	58	52	44	40	38	37	35	34	35	34	38	42	44	46	50	55	58	61					
		Strip Retail Plaza (<40k)	1.80	KSF	932	2.77	KSF	5	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5	0%	38%	55%	69%	79%	66%	64%	67%	70%	70%	51%	0%	0%	-	-	-	-	-	-	-	7	11	13	11	10	12	15	19	14	16	11	7	-	-	-						
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.80	KSF	932	11.53	KSF	21	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	85%	55%	35%	0%	0%	-	-	-	-	-	-	-	-	-	-	7	12	15	13	11	14	16	21	21	18	12	8	-	-	-				

[illegible]

Block H		Land Use Program				Parking Rate			Parking Supply/Demand (ITE)		Time of Day Demand (ITE)																																																
Scenarios	Type	Size	Unit	ITE Code	Demand Rate	Unit	ITE Max Peak Demand	Parking Type	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 PM	11:00 PM															
Monday-Thursday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	158	DU	221	1.23	DU	194	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	195	195	195	195	195	187	168	150	129	117	111	107	102	98	102	100	111	121	127	133	146	160	170	177		
		Strip Retail Plaza (<40k)	2.30	KSF	822	2.79	KSF	6	Shared	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	0%	-	-	-	-	-	-	187	168	150	129	117	111	107	102	98	102	100	111	121	127	133	146	160	170	177
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2.30	KSF	932	8.97	KSF	21	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	34%	56%	87%	91%	73%	0%	0%	0%	195	195	195	195	195	187	168	150	131	120	115	111	107	102	98	102	100	111	121	127	133	146	160	170	177
	1060 du	Multifamily Housing - 2+ BR (Mid-Rise)	97	DU	221	1.23	DU	119	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109			
		Strip Retail Plaza (<40k)	1.05	KSF	822	2.79	KSF	3	Shared	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109			
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.05	KSF	932	8.97	KSF	9	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	34%	56%	87%	91%	73%	0%	0%	0%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109		
Friday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	158	DU	221	1.23	DU	194	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	195	195	195	195	195	187	168	150	129	117	111	107	102	98	102	100	111	121	127	133	146	160	170	177		
		Strip Retail Plaza (<40k)	2.30	KSF	822	3.13	KSF	7	Shared	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109			
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2.30	KSF	932	14.27	KSF	33	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	34%	56%	87%	91%	73%	0%	0%	0%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109		
	1060 du	Multifamily Housing - 2+ BR (Mid-Rise)	97	DU	221	1.23	DU	119	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	195	195	195	195	195	187	168	150	131	120	115	111	107	102	98	102	100	111	121	127	133	146	160	170	177	
		Strip Retail Plaza (<40k)	1.05	KSF	822	3.13	KSF	3	Shared	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109			
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.05	KSF	932	14.27	KSF	15	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	34%	56%	87%	91%	73%	0%	0%	0%	120	120	120	120	120	115	103	92	79	72	68	62	60	62	61	68	74	78	82	90	98	104	109		
Saturday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	158	DU	221	1.04	DU	164	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	165	165	165	165	165	158	142	127	109	99	94	94	92	88	84	94	102	112	124	135	143	150				
		Strip Retail Plaza (<40k)	2.30	KSF	822	2.77	KSF	6	Shared	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0%	165	165	165	165	165	158	142	127	109	99	94	94	92	88	84	94	102	112	124	135	143	150					
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2.30	KSF	932	11.53	KSF	27	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	85%	55%	35%	0%	0%	0%	165	165	165	165	165	158	142	127	109	102	98	96	92	90	93	90	99	107	112	117	129	139	143	150		
	1060 du	Multifamily Housing - 2+ BR (Mid-Rise)	97	DU	221	1.04	DU	101	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	165	165	165	165	165	158	142	127	109	102	98	96	92	90	93	90	99	107	112	117	129	139	143	150		
		Strip Retail Plaza (<40k)	1.05	KSF	822	2.77	KSF	3	Shared	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0%	165	165	165	165	165	158	142	127	109	102	98	96	92	90	93	90	99	107	112	117	129	139	143	150			
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.05	KSF	932	11.53	KSF	12	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	85%	55%	35%	0%	0%	0%	165	165	165	165	165	158	142	127	109	102	98	96	92	90	93	90	99	107	112	117	129	139	143	150	

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Scenarios	Type	Size	Unit	ITE Code	Demand Rate	Unit	ITE Max Peak Demand	Parking Type	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Monday-Thursday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	119	DU	221	1.23	DU	5	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	147	147	147	147	147	141	126	113	97	88	84	81	77	74	77	75	84	91	96	100	110	121	128	134																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Strip Retail Plaza (<40k)	1.90	KSF	822	2.79	KSF	5	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	-	-	-	-	-	-	141	126	113	97	88	84	81	77	74	77	75	84	91	96	100	110	121	128	134																																																																																																																																																																																																																																																																																																																																																																																																																																													
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.90	KSF	932	8.97	KSF	11	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	55%	86%	100%	51%	37%	34%	56%	70%	87%	91%	73%	0%	0%	0%	0%	0%	0%	0%	0%	2	2	3	3	5	6	4	4	4	4	4	3	3	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																															
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	78	DU	221	1.23	DU	96	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	97	97	97	97	97	93	83	75	64	58	55	54	51	49	51	50	55	60	63	66	73	80	84	88																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Strip Retail Plaza (<40k)	0.80	KSF	822	2.79	KSF	2	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	-	-	-	-	-	93	83	75	64	58	55	54	51	49	51	50	55	60	63	66	73	80	84	88																																																																																																																																																																																																																																																																																																																																																																																																																																													
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Friday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	119	DU	221	1.23	DU	146	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	147	147	147	147	147	141	126	113	97	88	84	81	77	74	77	75	84	91	96	100	110	121	128	134																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Strip Retail Plaza (<40k)	1.90	KSF	822	3.13	KSF	6	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	-	-	-	-	-	-	141	126	113	97	88	84	81	77	74	77	75	84	91	96	100	110	121	128	134																																																																																																																																																																																																																																																																																																																																																																																																																																													
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.90	KSF	932	14.27	KSF	27	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	55%	86%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2	3	3	4	6	6	5	4	3	4	6	5	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																															
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		Strip Retail Plaza (<40k)	0.80	KSF	822	3.13	KSF	3	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	-	-	-	-	-	93	83	75	64	58	55	54	51	49	51	50	55	60	63	66	73	80	84	88																																																																																																																																																																																																																																																																																																																																																																																																																																													
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	0.80	KSF	932	14.27	KSF	11	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	55%	86%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2	3	3	4	6	6	5	4	3	4	6	5	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																											
Saturday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	119	DU	221	1.04	DU	124	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	124	124	124	124	124	119	107	96	82	75	71	69	65	62	65	64	71	77	81	85	89	93	102	108	113																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Strip Retail Plaza (<40k)	1.90	KSF	822	2.77	KSF	3	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	-	-	-	-	-	124	124	124	124	124	119	107	96	82	75	71	69	65	62	65	64	71	77	81	85	89	93	102	108	113																																																																																																																																																																																																																																																																																																																																																																																																																																							
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1.90	KSF	932	11.53	KSF	22	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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Scenarios	Type	Size	Unit	ITE Code	Demand Rate	Unit	ITE Max Peak Demand	Parking Type	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Monday-Thursday (3.5 FAR)	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	138	DU	221	1.23	DU	170	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	170	170	170	170	170	163	146	131	113	102	97	94	89	85	89	87	97	106	111	116	128	140	148	155																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Strip Retail Plaza (<40k)	2,40	KSF	822	2.79	KSF	7	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	2	3	4	4	6	7	5	5	5	5	6	5	4	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2,40	KSF	932	8.97	KSF	23	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	51%	37%	34%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	2	3	4	4	6	7	5	5	5	5	6	5	4	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																														
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	91	DU	221	1.23	DU	112	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	113	113	113	113	113	108	97	87	75	68	64	62	59	57	59	58	64	70	73	77	85	93	98	103																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Strip Retail Plaza (<40k)	1,60	KSF	822	2.79	KSF	4	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	33%	47%	55%	89%	100%	73%	73%	66%	70%	75%	70%	54%	48%	0%	0%	0%	-	-	-	-	-	-	1	2	3	3	4	4	3	4	4	4	3	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1,60	KSF	932	8.97	KSF	14	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	-	105	101	98	77	21	22	11	8	13	19	20	16	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																															
Friday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	138	DU	221	1.23	DU	170	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	113	113	113	113	113	108	97	87	76	70	67	65	64	15	8	6	63	62	67	74	77	81	88	96	98	103																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Strip Retail Plaza (<40k)	2,40	KSF	822	3.13	KSF	8	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	0%	0%	-	-	-	-	-	2	4	4	4	8	8	7	4	4	5	4	8	6	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																															
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2,40	KSF	932	14.27	KSF	23	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	10	10	10	10	33	35	18	13	12	20	30	32	26	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																															
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	91	DU	221	1.23	DU	112	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	113	113	113	113	113	108	97	87	75	68	64	62	59	57	59	58	64	70	73	77	85	93	98	103																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Strip Retail Plaza (<40k)	1,60	KSF	822	3.13	KSF	5	Shared	0%	0%	0%	0%	0%	0%	0%	0%	19%	40%	44%	52%	96%	96%	84%	52%	50%	63%	49%	100%	94%	73%	0%	0%	0%	0%	0%	-	-	-	-	-	1	3	3	3	5	5	5	3	3	4	4	3	6	5	4	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																													
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1,60	KSF	932	14.27	KSF	23	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%	96%	100%	51%	37%	34%	56%	87%	91%	73%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	-	1	3	3	3	5	5	5	3	3	4	4	3	6	5	4	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																												
Saturday	1800 du	Multifamily Housing - 2+ BR (Mid-Rise)	138	DU	221	1.04	DU	144	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	144	144	144	144	144	138	124	111	95	87	82	79	74	82	89	94	98	108	118	126	125	131																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Strip Retail Plaza (<40k)	2,40	KSF	822	2.77	KSF	7	Shared	0%	0%	0%	0%	0%	0%	0%	0%	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0%	0%	0%	-	-	-	-	-	-	3	6	5	6	7	7	6	5	5	5	5	8	5	4	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																														
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	2,40	KSF	932	11.53	KSF	28	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	0%	0%	0%	-	-	-	-	-	-	-	10	16	20	17	14	18	22	28	28	16	10	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																															
	1060 du (3.5 FAR)	Multifamily Housing - 2+ BR (Mid-Rise)	91	DU	221	1.04	DU	95	Shared	100%	100%	100%	100%	100%	96%	86%	77%	66%	60%	57%	55%	52%	50%	52%	51%	57%	62%	65%	68%	75%	82%	87%	91%	111	95	95	95	95	92	82	74	63	57	55	53	50	48	45	59	62	65	72	78	83	87																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Strip Retail Plaza (<40k)	1,60	KSF	822	2.77	KSF	4	Shared	0%	0%	0%	0%	0%	0%	0%	0%	4	5	38%	55%	66%	85%	100%	96%	79%	66%	64%	67%	70%	70%	51%	0%	0%	0%	0%	0%	-	-	-	-	-	-	2	3	3	4	4	5	3	4	3	6	5	4	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																														
		High-Turnover (Sit-Down) Restaurant (No Breakfast)	1,60	KSF	932	11.53	KSF	18	Shared	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	56%	69%	58%	49%	63%	77%	100%	100%	85%	55%	35%	0%	0%	0%	0%	0%	-	-	-	-	-	-	-	7	11	13	11	10	12	15	19	19	16	11	7	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																													
									95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95

Existing and Future Estimated Arena Annual Events

Event	Existing			Future Estimated			Net Change Per Same Event Type				Net Change with Existing Warriors Event	
	Events	Average # of Attendees per Event	Total Annual Attendees	Events	Average # of Attendees per Event	Total Annual Attendees	Events	Average # of Attendees per Event	Total Annual Attendees	Average # of Vehicles per Event	Average # of Attendees per Event	Average # of Vehicles per Event
Santa Cruz Warriors (1)	24	2,206	52,938	28	2,822	79,016	4	616	26,078	247	616	247
Santa Cruz Symphony	7	875	6,125	7	875	6,125	0	0	0	0	-1,331	-533
Other Entertainment (e.g., concerts) (1)	5	2,737	13,685	30	3,502	105,060	25	765	91,375	306	1,296	519
UCSC Sporting Events	35	100	3,500	40	100	4,000	5	0	500	0	-2,106	-843
Trade Shows	5	750	3,750	15	1,000	15,000	10	250	11,250	100	-1,206	-483
Small Events	5	200	1,000	10	200	2,000	5	0	1,000	0	-2,006	-803
Total	81		80,998	130		211,201						

Notes:

1. Assumes 85% attendee occupancy rate, plus 102 employees.

2. Assumes 100% vehicle trips. Assumes 2.5 persons per vehicle (Federal Highway Administration, Managing Travel for Planned Special Events [https://ops.fhwa.dot.gov/publications/fhwaop04010/chapter5_03.htm]).

Source: Santa Cruz Warriors and Santa Cruz Symphony, 2024.

1060 du	Time	Total								Locust Garage								River Front Garage								Soquel/Front Parking Garage							
		Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy	Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy	Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy	Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy
Friday 11.01.2024 NO GAME	12:00:00 AM	1242	120	0	459	0	579	663	47%	400	25		153	0	25	375	6%	450	9		153	0	9	441	2%	392	86		153	0	86	306	22%
	1:00:00 AM	1242	119	0	459	0	578	664	47%	400	25		153	0	25	375	6%	450	10		153	0	10	440	2%	392	84		153	0	84	308	21%
	2:00:00 AM	1242	119	0	459	0	578	664	47%	400	25		153	0	25	375	6%	450	10		153	0	10	440	2%	392	84		153	0	84	308	21%
	3:00:00 AM	1242	122	0	459	0	581	661	47%	400	25		153	0	25	375	6%	450	11		153	0	11	439	2%	392	86		153	0	86	306	22%
	4:00:00 AM	1242	123	0	459	0	582	660	47%	400	25		153	0	25	375	6%	450	11		153	0	11	439	2%	392	87		153	0	87	305	22%
	5:00:00 AM	1242	124	0	408	0	532	710	43%	400	25		136	0	25	375	6%	450	12		136	0	12	438	3%	392	87		136	0	87	305	22%
	6:00:00 AM	1242	128	0	276	0	404	838	33%	400	27		92	0	27	373	7%	450	13		92	0	13	437	3%	392	88		92	0	88	304	22%
	7:00:00 AM	1242	151	0	159	0	310	932	25%	400	33		53	0	33	367	8%	450	25		53	0	25	425	6%	392	93		53	0	93	299	24%
	8:00:00 AM	1242	205	0	15	0	220	1022	18%	400	53		5	0	53	347	13%	450	43		5	0	43	407	10%	392	109		5	0	109	283	28%
	9:00:00 AM	1242	346	0	0	0	346	896	28%	400	131		0	0	131	269	33%	450	76		0	0	76	374	17%	392	139		0	0	139	253	35%
	10:00:00 AM	1242	430	0	0	0	430	812	35%	400	161		0	0	161	239	40%	450	94		0	0	94	356	21%	392	175		0	0	175	217	45%
	11:00:00 AM	1242	484	0	0	0	484	758	39%	400	186		0	0	186	214	47%	450	103		0	0	103	347	23%	392	195		0	0	195	197	50%
	12:00:00 PM	1242	538	0	0	291	829	413	67%	400	204		0	97	204	196	51%	450	116		0	97	116	334	26%	392	218		0	97	218	174	56%
	1:00:00 PM	1242	563	0	0	309	872	370	78%	400	213		0	103	213	187	53%	450	118		0	103	118	332	26%	392	232		0	103	232	160	59%
	2:00:00 PM	1242	569	0	0	84	653	589	53%	400	229		0	28	229	171	57%	450	116		0	28	116	334	26%	392	224		0	28	224	168	57%
	3:00:00 PM	1242	536	0	0	0	536	706	43%	400	221		0	0	221	179	55%	450	103		0	0	103	347	23%	392	212		0	0	212	180	54%
	4:00:00 PM	1242	539	0	0	0	539	703	43%	400	210		0	0	210	190	53%	450	106		0	0	106	344	24%	392	223		0	0	223	169	57%
	5:00:00 PM	1242	509	0	0	87	596	646	48%	400	191		0	29	191	209	48%	450	106		0	29	106	344	24%	392	212		0	29	212	180	54%
	6:00:00 PM	1242	491	0	3	207	701	541	56%	400	168		1	69	168	232	42%	450	91		1	69	91	359	20%	392	232		1	69	232	160	59%
	7:00:00 PM	1242	483	0	42	273	798	444	64%	400	154		14	91	154	246	39%	450	96		14	91	96	354	21%	392	233		14	91	233	159	59%
	8:00:00 PM	1242	461	0	132	189	782	460	63%	400	130		44	63	130	270	33%	450	97		44	63	97	353	22%	392	234		44	63	234	158	60%
	9:00:00 PM	1242	358	0	225	0	583	659	47%	400	92		75	0	92	308	23%	450	70		75	0	70	380	16%	392	196		75	0	196	196	50%
	10:00:00 PM	1242	249	0	288	0	537	705	43%	400	63		96	0	63	337	16%	450	34		96	0	34	416	8%	392	152		96	0	152	240	39%
	11:00:00 PM	1242	186	0	342	0	528	714	43%	400	44		114	0	44	356	11%	450	18		114	0	18	432	4%	392	124		114	0	124	268	32%
Saturday 11.02.2024 NO GAME	12:00:00 AM	1242	162	0	258	0	420	822	34%	400	33		86	0	33	367	8%	450	15		86	0	15	435	3%	392	114		86	0	114	278	29%
	1:00:00 AM	1242	153	0	258	0	411	831	33%	400	27		86	0	27	373	7%	450	15		86	0	15	435	3%	392	111		86	0	111	281	28%
	2:00:00 AM	1242	151	0	258	0	409	833	33%	400	26		86	0	26	374	7%	450	16		86	0	16	434	4%	392	109		86	0	109	283	28%
	3:00:00 AM	1242	145	0	258	0	403	839	32%	400	25		86	0	25	375	6%	450	16		86	0	16	434	4%	392	104		86	0	104	288	27%
	4:00:00 AM	1242	145	0	258	0	403	839	32%	400	25		86	0	25	375	6%	450	17		86	0	17	433	4%	392	103		86	0	103	289	26%
	5:00:00 AM	1242	145	0	213	0	358	884	29%	400	25		71	0	25	375	6%	450	17		71	0	17	433	4%	392	103		71	0	103	289	26%
	6:00:00 AM	1242	148	0	105	0	253	989	20%	400	27		35	0	27	373	7%	450	17		35	0	17	433	4%	392	104		35	0	104	288	27%
	7:00:00 AM	1242	157	0	9	0	166	1076	13%	400	31		3	0	31	369	8%	450	18		3	0	18	432	4%	392	108		3	0	108	284	28%
	8:00:00 AM	1242	165	0	0	0	165	1077	13%	400	37		0	0	37	363	9%	450	17		0	0	17	433	4%	392	111		0	0	111	281	28%
	9:00:00 AM	1242	193	0	0	0	193	1049	16%	400	51		0	0	51	349	13%	450	24		0	0	24	426	5%	392	118		0	0	118	274	30%
	10:00:00 AM	1242	231	0	0	0	231	1011	19%	400	71		0	0	71	329	18%	450	38		0	0	38	412	8%	392	122		0	0	122	270	31%
	11:00:00 AM	1242	291	0	0	0	291	951	23%	400	104		0	0	104	296	26%	450	42		0	0	42	408	9%	392	145		0	0	145	247	37%
	12:00:00 PM	1242	356	0	0	51	407	835	33%	400	135		0	17																			

1800 du	Time	Total								Locust Garage								River Front Garage								Sequel/Front Parking Garage							
		Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy	Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy	Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy	Capacity	Existing	Arena	Residential	Retail/Restaurant	Ex + P	Delta	Occupancy
Friday 11.01.2024 NO GAME	12:00:00 AM	1242	120	0	1368	0	1488	-246	120%	400	25		456	0	481	-81	120%	450	9		456	0	465	-15	103%	392	86		456	0	542	-150	138%
	1:00:00 AM	1242	119	0	1368	0	1487	-245	120%	400	25		456	0	481	-81	120%	450	10		456	0	466	-16	104%	392	84		456	0	540	-148	138%
	2:00:00 AM	1242	119	0	1368	0	1487	-245	120%	400	25		456	0	481	-81	120%	450	10		456	0	466	-16	104%	392	84		456	0	540	-148	138%
	3:00:00 AM	1242	122	0	1368	0	1490	-248	120%	400	25		456	0	481	-81	120%	450	11		456	0	467	-17	104%	392	86		456	0	542	-150	138%
	4:00:00 AM	1242	123	0	1368	0	1491	-249	120%	400	25		456	0	481	-81	120%	450	11		456	0	467	-17	104%	392	87		456	0	543	-151	139%
	5:00:00 AM	1242	124	0	1281	0	1405	-163	113%	400	25		427	0	452	-52	113%	450	12		427	0	439	11	98%	392	87		427	0	514	-122	131%
	6:00:00 AM	1242	128	0	1062	0	1190	52	96%	400	27		354	0	381	19	96%	450	13		354	0	367	83	82%	392	88		354	0	442	-50	113%
	7:00:00 AM	1242	151	0	864	0	1015	227	82%	400	33		288	0	321	79	80%	450	25		288	0	313	137	70%	392	93		288	0	381	11	97%
	8:00:00 AM	1242	205	0	618	0	823	419	66%	400	53		206	0	259	141	65%	450	43		206	0	249	201	55%	392	109		206	0	315	77	80%
	9:00:00 AM	1242	346	0	483	0	829	413	67%	400	131		161	0	292	108	73%	450	76		161	0	237	213	53%	392	139		161	0	300	92	77%
	10:00:00 AM	1242	430	0	417	0	847	395	68%	400	161		139	0	300	100	75%	450	94		139	0	233	217	52%	392	175		139	0	314	78	80%
	11:00:00 AM	1242	484	0	372	0	856	386	69%	400	186		124	0	310	90	78%	450	103		124	0	227	223	50%	392	195		124	0	319	73	81%
	12:00:00 PM	1242	538	0	306	285	1129	113	91%	400	204		102	95	401	-1	100%	450	116		102	95	313	137	70%	392	218		102	95	415	-23	106%
	1:00:00 PM	1242	563	0	261	303	1127	115	91%	400	213		87	101	401	-1	100%	450	118		87	101	306	144	68%	392	232		87	101	420	-28	107%
	2:00:00 PM	1242	569	0	306	84	959	283	77%	400	229		102	28	359	41	90%	450	116		102	28	246	204	55%	392	224		102	28	354	38	90%
	3:00:00 PM	1242	536	0	285	0	821	421	66%	400	221		95	0	316	84	79%	450	103		95	0	198	252	44%	392	212		95	0	307	85	78%
	4:00:00 PM	1242	539	0	417	0	956	286	77%	400	210		139	0	349	51	87%	450	106		139	0	245	205	54%	392	223		139	0	362	30	92%
	5:00:00 PM	1242	509	0	528	84	1121	121	90%	400	191		176	28	395	5	99%	450	106		176	28	310	140	69%	392	212		176	28	416	-24	106%
	6:00:00 PM	1242	491	0	597	201	1289	-47	104%	400	168		199	67	434	-34	109%	450	91		199	67	357	93	79%	392	232		199	67	498	-106	127%
	7:00:00 PM	1242	483	0	663	270	1416	-174	114%	400	154		221	90	465	-65	118%	450	96		221	90	407	43	90%	392	233		221	90	544	-152	139%
	8:00:00 PM	1242	461	0	819	186	1466	-224	118%	400	130		273	62	465	-65	118%	450	97		273	62	432	18	96%	392	234		273	62	569	-177	145%
	9:00:00 PM	1242	358	0	972	0	1330	-88	107%	400	92		324	0	416	-16	104%	450	70		324	0	394	56	88%	392	196		324	0	520	-128	133%
	10:00:00 PM	1242	249	0	1083	0	1332	-90	107%	400	63		361	0	424	-24	106%	450	34		361	0	395	55	88%	392	152		361	0	513	-121	131%
	11:00:00 PM	1242	186	0	1173	0	1359	-117	108%	400	44		391	0	435	-35	108%	450	18		391	0	409	41	91%	392	124		391	0	515	-123	131%
Saturday 11.02.2024 NO GAME	12:00:00 AM	1242	162	0	1029	0	1191	51	96%	400	33		343	0	376	24	94%	450	15		343	0	358	92	80%	392	114		343	0	457	-65	117%
	1:00:00 AM	1242	153	0	1029	0	1182	60	95%	400	27		343	0	370	30	93%	450	15		343	0	358	92	80%	392	111		343	0	454	-62	116%
	2:00:00 AM	1242	151	0	1029	0	1180	62	95%	400	26		343	0	369	31	92%	450	16		343	0	359	91	80%	392	109		343	0	452	-60	115%
	3:00:00 AM	1242	145	0	1029	0	1174	68	95%	400	25		343	0	368	32	92%	450	16		343	0	359	91	80%	392	104		343	0	447	-55	114%
	4:00:00 AM	1242	145	0	1029	0	1174	68	95%	400	25		343	0	368	32	92%	450	17		343	0	360	90	80%	392	103		343	0	446	-54	114%
	5:00:00 AM	1242	145	0	954	0	1099	143	86%	400	25		318	0	343	57	86%	450	17		318	0	335	115	74%	392	103		318	0	421	-29	107%
	6:00:00 AM	1242	148	0	771	0	919	323	74%	400	27		257	0	284	116	71%	450	17		257	0	274	176	61%	392	104		257	0	361	31	92%
	7:00:00 AM	1242	157	0	603	0	760	482	61%	400	31		201	0	232	168	58%	450	18		201	0	219	231	49%	392	108		201	0	309	83	79%
	8:00:00 AM	1242	165	0	399	0	564	678	45%	400	37		133	0	170	230	43%	450	17		133	0	150	300	33%	392	111		133	0	244	148	62%
	9:00:00 AM	1242	193	0	285	0	478	764	38%	400	51		95	0	146	254	37%	450	24		95	0	119	331	26%	392	118		95	0	213	179	54%
	10:00:00 AM	1242	231	0	228	0	459	783	37%	400	71		76	0	147	253	37%	450	38		76	0	114	336	25%	392	122		76	0	198	194	51%
	11:00:00 AM	1242	291	0	189	0	480	762	39%	400																							