

S2A MODULAR MANUFACTURING TRAFFIC IMPACT ANALYSIS

City of Hemet

May 12, 2020



Traffic Engineering • Transportation Planning • Parking • Noise & Vibration
Air Quality • Global Climate Change • Health Risk Assessment

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prepared by

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EXECUTIVE SUMMARY

The purpose of this Traffic Impact Analysis is to provide an assessment of traffic operations resulting from development of the proposed S2A Modular Manufacturing project and to identify measures necessary to mitigate potentially significant traffic impacts. This report analyzes traffic impacts for the anticipated project phase one completion in Year 2021 and fully operational by completion Year 2024.

Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms related to transportation engineering.

PROJECT DESCRIPTION

The 32.1-acre project site is located at the northwest corner of State Street and Crows Nest Place in the City of Hemet. The project site is currently vacant. The proposed project involves construction of a 250,000 square foot manufacturing facility for modular housing.

The proposed project is planned to be constructed in two phases. The project proposes a phase one construction of 111,750 square foot of manufacturing land use with an anticipated completion in Year 2021 and a second construction phase of 138,250 square foot of manufacturing land use with a fully operational completion by Year 2024.

PROJECT TRIPS

The proposed project is forecast to generate a total of approximately 983 daily vehicle trips, including 156 vehicle trips during the AM peak hour and 168 vehicle trips during the PM peak hour. The proposed project is forecast to generate a total of approximately 1,262 daily PCE (Passenger Car Equivalent) trips, including 237 PCE trips during the AM peak hour and 220 PCE trips during the PM peak hour (see Table 2).

PROJECT DESIGN FEATURES

Two full access driveways are proposed on Crows Nest Place. Trucks to and from the site will primarily use the west access driveway. This analysis assumes the following improvements will be constructed by the project to provide project site access:

Project West Driveway at Crows Nest Place - #7

- Install outbound cross street stop-control.
- Construct the southbound approach to consist of one shared left-turn/right-turn lane.

Project East Driveway at Crows Nest Place - #8

- Install outbound cross street stop-control.
- Construct the southbound approach to consist of one shared left-turn/right-turn lane.

EXISTING OPERATIONS

The study intersections currently operate within acceptable Levels of Service (D or better) during the peak hours for Existing conditions (see Table 1).

FORECAST OPERATIONS

Existing Plus Project: The study intersections are forecast to operate within acceptable Levels of Service (D or better) for Existing Plus Project conditions, except for the following study intersection that is projected to operate at unacceptable Level of Service without improvements (see Table 4):

- State Street (NS) at Crows Nest Place (EW) - #2

This intersection is projected to operate at an acceptable Level of Service with improvements specified in the following mitigation measures section.

Opening Year (2021) Plus Project (EAGP): The study intersections are forecast to operate within acceptable Levels of Service (D or better) for Opening Year (2021) Plus Project (EAGP) conditions, except for the following study intersection that is projected to operate at unacceptable Level of Service without improvements (see Table 5):

- State Street (NS) at Crows Nest Place EW) - #2

This intersection is projected to operate at an acceptable Level of Service with improvements specified in the following mitigation measures section.

Opening Year (2021) Plus Project Plus Cumulative (EAGPC): The study intersections are forecast to operate within acceptable Levels of Service (D or better) for Opening Year (2021) Plus Project Plus Cumulative (EAGPC) conditions, except for the following study intersections that are projected to operate at unacceptable Levels of Service without improvements (see Table 5):

- State Street (NS) at Crows Nest Place (EW) - #2
- State Street (NS) at Menlo Avenue (EW) - #4

These intersections are projected to operate at acceptable Levels of Service with improvements specified in the following mitigation measures section.

Completion Year (2024) Plus Project (EAGP): The study intersections are forecast to operate within acceptable Levels of Service (D or better) for Completion Year (2024) Plus Project (EAGP) conditions, except for the following study intersection that is projected to operate at unacceptable Level of Service without improvements (see Table 6):

- State Street (NS) at Crows Nest Place (EW) - #2

This intersection is projected to operate at an acceptable Level of Service with improvements specified in the following mitigation measures section.

Completion Year (2024) Plus Project Plus Cumulative (EAGPC): The study intersections are forecast to operate within acceptable Levels of Service (D or better) for Completion Year (2024) Plus Project Plus Cumulative (EAGPC) conditions, except for the following study intersections that are projected to operate at unacceptable Levels of Service without improvements (see Table 6):

- State Street (NS) at Crows Nest Place (EW) - #2
- State Street (NS) at Menlo Avenue (EW) - #4

These intersections are projected to operate at acceptable Levels of Service with improvements specified in the following mitigation measures section.

It should be noted that to provide a conservative analysis for State Street and Florida Avenue (SR-74), this cumulative development analysis does not include re-routing of eastbound-westbound Florida Avenue traffic volumes with the proposed future realignment of SR-79 to the west of State Street.

MITIGATION MEASURES

Direct Impacts

The proposed project is forecast to result in no significant traffic impacts at the study intersections for Existing Plus Project conditions, with improvements.

The following improvement is required with project development within the study area to maintain an acceptable Level of Service at the study intersection:

- State Street (NS) at Crows Nest Place (EW) - #2
 - Install Traffic Signal

Cumulative Impacts

In addition to the improvements previously identified for With Project conditions, as shown in the traffic impact analysis reports Opening Year Plus Project Plus Cumulative (EAGPC) conditions, the following improvements are required with cumulative development within the study area to maintain an acceptable Level of Service at the study intersection:

- State Street (NS) at Menlo Avenue (EW) - #4
 - Reconfigure eastbound approach striping to include one left turn lane and one shared through/right lane.
 - Reconfigure westbound approach striping to include one left turn lane, one through lane, and one right turn lane.
 - Modify traffic signal phasing to provide permissive eastbound and westbound phasing.

The proposed project shall contribute its fair share contribution to this cumulative impact as well as contribution to the City of Hemet Development Impact Fee (DIF) programs for the improvements for Opening Year (2021) Plus Project Plus Cumulative (EAGPC) listed above and other non-specified City determined capital improvement projects within the study area.

Development Impact Fee

Development Impact Fees (DIF) are collected on all new projects from developers building in the City of Hemet. The fees are used to build improvements to serve or to reduce the impact of new developments. Traffic capital improvement projects are funded in part by DIF Fund 329 (Bridges, Streets and Traffic Facilities). The Development Impact Fee provides a funding mechanism for arterial streets, traffic signals, interchange improvements. The City of Hemet Development Impact Fee costs included acquiring (right-of-way), designing, constructing and improving and maintaining of arterial streets from the current lane configuration to the ultimate lane configuration, new traffic signal as warranted, and interchange improvements. As required by City Code, all development projects are required to pay the Development Impact Fee as a condition of development.

At some locations, payment of the City of Hemet Development Impact Fee (DIF) would constitute mitigation of cumulative impacts. As mitigation for potential cumulative impacts, the proposed project shall contribute towards the identified improvements through an adopted traffic impact fee program, or through an equivalent fair share contribution for improvements not covered within such fee programs. Typically, applicable fees include the City of Hemet Development Impact Fee, and the County of Riverside Transportation Uniform Mitigation Fee (TUMF) and Road and Bridge Benefit District (RBBD) programs.

GENERAL RECOMMENDATIONS

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the project.

Figure 39 summarizes the circulation recommendations for the proposed project.

- A construction work (temporary) traffic control plans are required by State law in accordance with the standards set forth in the California Manual of Uniform Traffic Control Devices (2014), and shall be submitted to the City of Hemet prior to the issuance of a grading permit or the start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closure and/or detour as well as haul routes and hours of operation. Whenever possible, construction related truck trips should be restricted to off-peak hours, to the extent that conditions permit.
- All roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project should be constructed in accordance with applicable State/ Federal engineering standards and to the satisfaction of the City of Hemet Public Works Department.
- Site-adjacent roadways should be constructed and/or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Hemet Public Works Department.
- Adequate off-street parking should be provided to the satisfaction of City of Hemet Planning Department based on supporting parking and density analysis prepared for the project.
- The final grading, landscaping, and street improvement plans should demonstrate that sight distance standards are met in accordance with applicable City of Hemet/California Department of Transportation sight distance standards.

As is the case for any roadway design, the City of Hemet should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

1. INTRODUCTION

This section describes the purpose of this traffic impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

The purpose of this Traffic Impact Analysis is to provide an assessment of traffic operations resulting from development of the proposed S2A Modular Manufacturing project and to identify measures necessary to mitigate potentially significant traffic impacts. This report analyzes traffic impacts for the anticipated project Phase 1 completion in Year 2021 and fully operational by completion Year 2024.

Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms related to transportation engineering.

PROJECT DESCRIPTION

The 32.1-acre project site is located at the northwest corner of State Street and Crows Nest Place in the City of Hemet. The project site is currently vacant. The proposed project involves construction of a 250,000 square foot manufacturing facility for modular housing.

Two full access driveways are proposed on Crows Nest Place. Trucks to and from the site will primarily use the west access driveway.

PROJECT PHASING

The proposed project is planned to be constructed in two phases. The project proposes a phase one construction of 111,750 square foot of manufacturing land use with an anticipated completion in Year 2021 and a second construction phase of 138,250 square foot of manufacturing land use with a fully operational completion by Year 2024.

STUDY AREA

Based on the scoping coordination with City of Hemet staff (see Appendix B), the study area consists of the following study intersections within the City of Hemet, City of San Jacinto, and California Department of Transportation (Caltrans) jurisdictions:

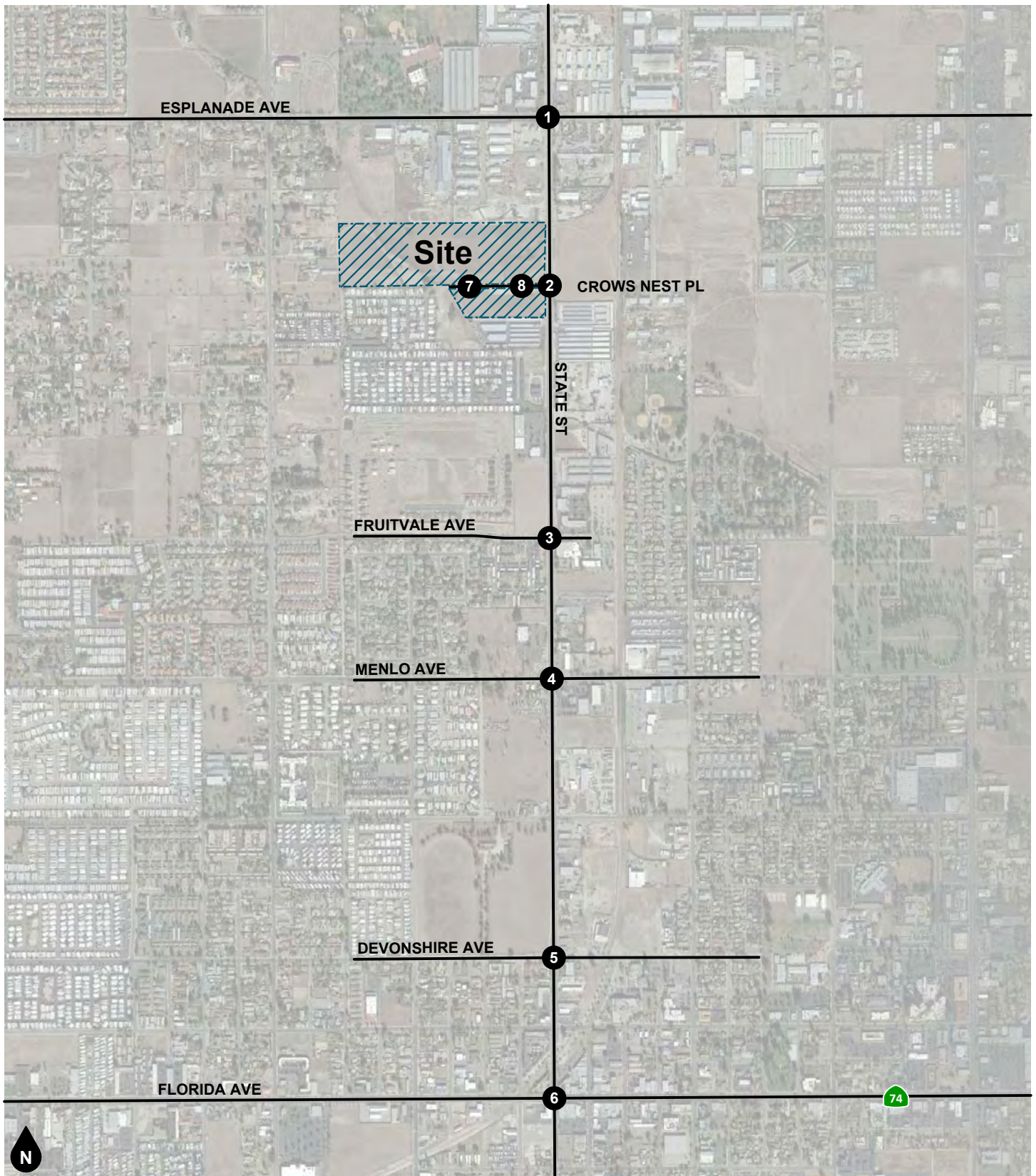
Study Intersections ¹	Jurisdiction
1. State Street (NS) at Esplanade Avenue (EW)	City of Hemet / City of San Jacinto
2. State Street (NS) at Crows Nest Place (EW)	City of Hemet
3. State Street (NS) at Fruitvale Avenue (EW)	City of Hemet
4. State Street (NS) at Menlo Avenue (EW)	City of Hemet
5. State Street (NS) at Devonshire Avenue (EW)	City of Hemet
6. State Street (NS) at Florida Avenue [SR-74] (EW)	Caltrans / City of Hemet
7. Project West Driveway (NS) at Crows Nest Place (EW)	City of Hemet
8. Project East Driveway (NS) at Crows Nest Place (EW)	City of Hemet

[1] (NS) = North-South Roadway; (EW) = East-West Roadway; SR = State Route

ANALYSIS SCENARIOS

The following scenarios are analyzed during typical weekday AM and PM peak hour conditions:

- Existing
- Existing Plus Project
- Opening Year (2021) Plus Project (EAGP)
- Opening Year (2021) Plus Project Plus Cumulative (EAGPC)
- Completion Year (2024) Plus Project (EAGP)
- Completion Year (2024) Plus Project Plus Cumulative (EAGPC)



Legend
 # Study Intersection

Figure 1
Project Location Map

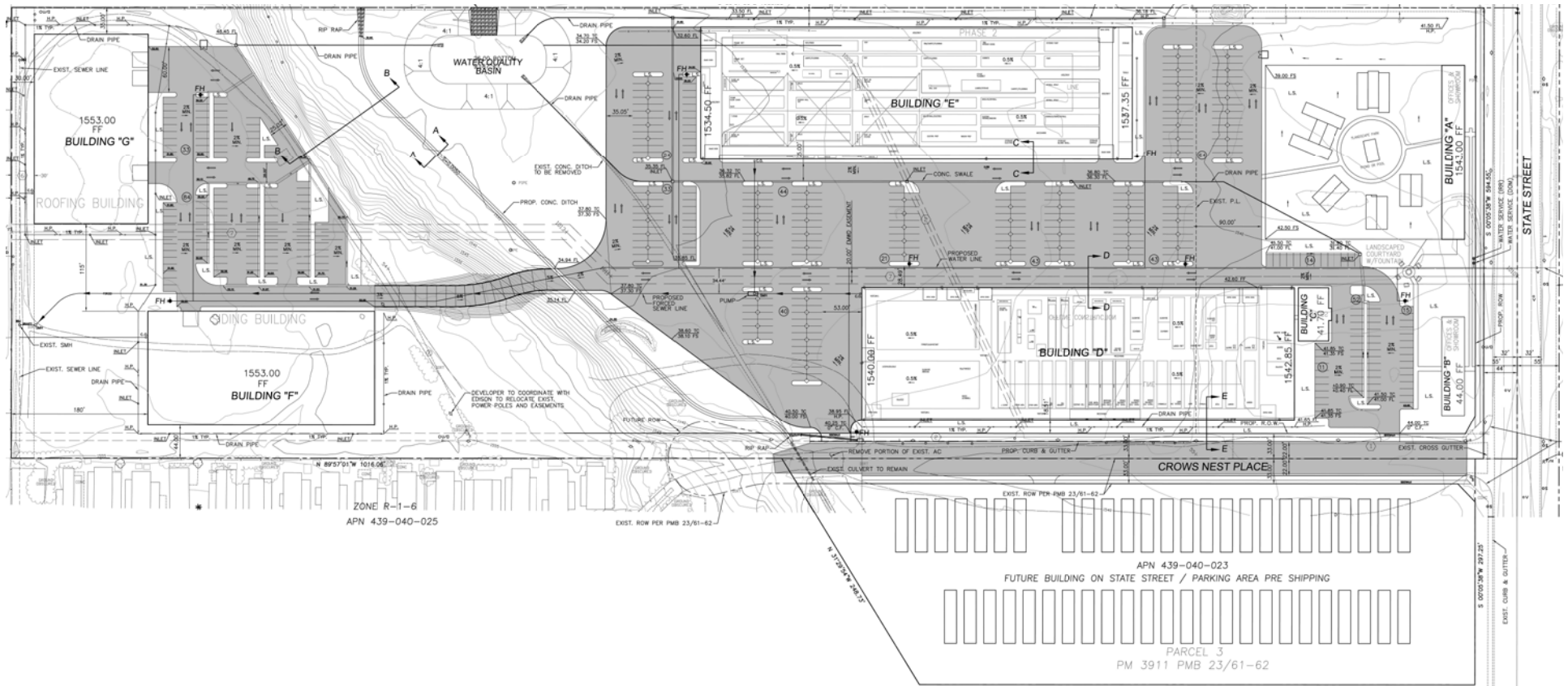


Figure 2
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies.

INTERSECTION DELAY METHODOLOGY

The technique used to assess the performance of intersections in the City of Hemet and State highways is known as the intersection delay methodology based on the procedures contained in the [Highway Capacity Manual](#). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, [Highway Capacity Manual](#) (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst individual movement (or movements sharing a single lane).

Intersection delay analysis was performed using the Vistro (Version 6.00-00) software. The intersection Level of Service analysis has been performed in accordance with Appendix B of the Riverside County Congestion Management Program, and Riverside County Transportation Department [Traffic Impact Analysis Preparation Guide](#), including minimum phase times, lost time, and saturation flow rates.

PERFORMANCE STANDARDS

City of Hemet

In accordance with the City of Hemet General Plan, the City has established a peak Level of Service D or better as acceptable on all City maintained roads and conventional State Highways. Therefore, any intersection operating at Level of Service E or F is considered deficient.

City of San Jacinto

In accordance with the City of San Jacinto General Plan, the City has established a peak Level of Service D or better as acceptable for all intersections along the City designated street and highway system.

California Department of Transportation

As stated in the Guide for the Preparation of Traffic Impact Studies (State of California, 2002), “California Department of Transportation endeavors to maintain a target LOS [Level of Service] at the transition between LOS “C” and LOS “D” on State highway facilities”. The California Department of Transportation acknowledges this may not always be feasible and recommends consultation with the California Department of Transportation to determine the appropriate target Level of Service. For consistency with local requirements, this analysis defines Level of Service D as the minimum acceptable Level of Service for State Highway facilities.

SIGNIFICANCE IMPACT THRESHOLDS

City of Hemet

Based on the City of Hemet performance standards, a project impact is defined as significant if the proposed project is forecast to result in one or more of the following conditions:

- The addition of project-generated trips is forecast to cause or worsen unacceptable Level of Service (E or F) at a study roadway segment or signalized study intersection.
- The addition of project-generated trips is forecast to cause or worsen unacceptable Level of Service (E or F) at an unsignalized study intersection and the peak hour traffic volume warrant (Warrant 3) is satisfied in accordance with the California Manual on Uniform Traffic Control Devices.

To mitigate a significant project impact at facilities with unacceptable Level of Service (E or F) under pre-project conditions, the project shall provide or contribute to improvements that would, at a minimum, provide Level of Service that is equal to or better than pre-project conditions.

City of San Jacinto

Based on the City of San Jacinto performance standards, a project impact is defined as significant if the proposed project is forecast to cause or worsen unacceptable Level of Service (E or F) at a study intersection.

To mitigate a significant project impact at facilities with unacceptable Level of Service (E or F), the project shall provide or contribute to improvements that would, at a minimum, provide Level of Service D.

California Department of Transportation

Based on the California Department of Transportation established performance standards, a potentially significant traffic impact is defined to occur if the addition of project generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable Level of Service (D or better) to unacceptable Level of Service (E or F).

MITIGATION REQUIREMENTS

If a project is forecast to cause a significant traffic impact, feasible mitigation measures that will reduce the impact to a less than significant level are identified. Mitigation measures can be in many forms, including the addition of lanes, traffic control modification, or demand management measures. To mitigate a significant impact at facilities with acceptable Level of Service under the pre-project conditions, the project shall provide or contribute to improvements that would provide acceptable Level of Service. To mitigate a significant impact at facilities with unacceptable Level of Service under the pre-project conditions, the project shall provide or contribute to improvements that would provide Level of Service that is equal to or better than pre-project conditions. If no feasible mitigation measures can be identified for a significantly impacted facility, the impact will remain significant and unavoidable and a statement of overriding considerations is required.

3. EXISTING CONDITIONS

Existing roadway conditions and General Plan Transportation Elements are presented in this section.

EXISTING ROADWAY SYSTEM

Figure 3 identifies the lane geometry and intersection traffic controls for Existing conditions based on a field survey of the study area. Regional access to the project area is provided by the SR-74 State Route south of the project site. The key north-south roadway providing local circulation is State Street. The key east-west roadways providing local circulation are Esplanade Avenue, Crows Nest Place, Fruitvale Avenue, Menlo Avenue, Devonshire Avenue and Florida Avenue.

State Route 74 (SR-74)/Florida Avenue is a 4-lane divided roadway classified as a State Highway on the City of Hemet General Plan Circulation Element. Florida Avenue classified as a 4-lane divided Secondary (76-foot roadway cross-section west of Gilbert Street) in the City of Hemet General Plan. SR-74 State Route access is provided at the intersection of State Street and Florida Avenue. It currently carries approximately 29,500 to 30,500 vehicles per day in the project vicinity.

State Street is a 4-lane divided to two-lane undivided roadway in the study area. State Street classified as a 4-lane divided Secondary (76-foot roadway cross-section north of Devonshire and 64-foot roadway cross-section south of Devonshire) in the City of Hemet General Plan. On-street parking is generally prohibited in the project area. Dedicated on-street bicycle lanes are not currently provided in the study area. Sidewalks are generally provided on both sides of the roadway.

Esplanade Avenue is a 4-lane divided roadway in the study area. Esplanade Avenue classified as a 4-lane divided Secondary (76-foot roadway cross-section) in the City of Hemet General Plan and 4-lane divided Major (76-foot roadway cross-section) in the City of San Jacinto General Plan. On-street parking is generally prohibited in the project area. Dedicated on-street bicycle lanes are not currently provided in the study area. Sidewalks are generally provided on both sides of the roadway.

Crows Nest Place is an unpaved roadway in the study area. Crows Nest Place is an unclassified roadway in the City of Hemet General Plan. On-street parking, on-street bicycle lanes, and sidewalks are not currently provided.

Fruitvale Avenue is a 2-lane undivided roadway in the study area. Fruitvale Avenue classified as a 2-lane undivided Collector (44-foot roadway cross-section) in the City of Hemet General Plan. On-street parking is generally not permitted on the road. Dedicated on-street bicycle lanes are not currently provided. Sidewalks are not provided on both sides of the road.

Menlo Avenue is a two-lane undivided to 3-lane undivided roadway in the study area. Menlo Avenue classified as a 4-lane undivided Secondary (64-foot roadway cross-section) in the City of Hemet General Plan. On-street parking is generally prohibited on the road. Dedicated on-street bicycle lanes are not currently provided, however a bike route is specified in the City of Hemet General Plan. Sidewalks are not provided on both sides of the road.

Devonshire Avenue is a 3-lane divided to two lane undivided roadway in the study area. Devonshire Avenue classified as a 3-lane undivided Express Collector (44-foot roadway cross-section) west of State Street and 2-lane undivided Collector (44-foot roadway cross-section) east of State Street in the City of Hemet General Plan. On-street parking is generally not permitted on the road. Dedicated on-street bicycle lanes are not currently provided, however a bike route is specified on the south side of the road for the Express Collector segment in the City of Hemet General Plan. Sidewalks are provided on the south side of the road.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 4. As shown on Figure 4, pedestrian sidewalks are currently provided along the roadways adjacent to the project site.

TRANSIT FACILITIES

Figure 5 shows the existing transit routes available in the project vicinity. As shown in Figure 5, the study area is currently served by Riverside Transit Agency (RTA) Route 31, 32, 33 and 217 along State Street, Route 42 along Esplanade Avenue, Route 32 along Menlo Avenue, Route 31 and 33 along Devonshire, Route 28 along Florida Avenue, as well as Amtrak train station at State Street north of Florida Avenue.

GENERAL PLAN CONTEXT

Figure 6 shows the City of Hemet General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Hemet standard roadway cross-sections are illustrated on Figure 7.

BICYCLE ROUTES

There are currently bicycle lanes not provided on State Street, Menlo Avenue, Devonshire Avenue and Florida Avenue. On-street bicycle lanes are proposed in the City of Hemet General Plan for State Street (north of Devonshire Avenue), Menlo Avenue, Devonshire Avenue and Florida Avenue. The City of Hemet General Plan Bike Routes is depicted on Figure 8.

TRUCK ROUTES

Figure 9 shows the designated truck routes as identified in the City of Hemet General Plan.

EXISTING AVERAGE DAILY TRAFFIC AND INTERSECTION VOLUMES

Existing peak hour intersection turning movement volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained during typical weekday conditions in July 2019. The AM peak period was counted between 7:00 AM and 9:00 AM and the PM peak period was counted between 4:00 PM and 6:00 PM. The actual peak hour within the peak period is the four consecutive 15-minute periods with the highest total volume when all movements are added together. Thus, the weekday PM peak hour at one intersection may be 4:45 PM to 5:45 PM of the four consecutive 15-minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

The Existing average daily traffic volumes have been obtained from the [2017 Traffic Volumes on California State Highways](#) by the California Department of Transportation and factored from peak hour intersection turning movement volumes using the following formula for each intersection leg:

$$\text{PM Peak Hour (Approach Volume + Exit Volume)} \times 12^1 = \text{Leg Volume}$$

Since some traffic counts were conducted in July, the traffic volumes used in the analysis were increased by a “school traffic” factor to represent typical weekday conditions during the school year. AM peak hour and PM peak hour counts during the school year were conducted at the State Street and Esplanade Avenue intersection prior to the start of this study. The peak hour counts during the school year were compared to the new peak hour counts. From this data, the school traffic factor was determined to increase the July counts

¹ Approximate average PM peak hour K factor for based on data 24 hour count data.

for the State Street intersections. The AM school traffic factor of 32 percent and the PM school traffic factor of 17 percent was used to increase the July counts.

Figure 10 shows the Existing average daily traffic volumes. The Existing average daily traffic volumes have been obtained from the 2017 Traffic Volumes on California State Highways by the California Department of Transportation and factored from peak hour intersection turning movement volumes.

Existing peak hour intersection turning movement volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained during typical weekday conditions. Figure 11 and Figure 12 show the Existing AM and PM peak hour intersection turning movement volumes, respectively.

EXISTING INTERSECTION LEVEL OF SERVICE

The intersection Levels of Service for Existing conditions are shown in Table 1. Detailed intersection Levels of Service calculation worksheets are provided in Appendix D.

The study intersections currently operate within acceptable Levels of Service (D or better) during the peak hours for Existing conditions (see Table 1).

Table 1
Existing Intersection Levels of Service

ID	Study Intersection	Traffic Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS
1.	State Street at Esplanade Avenue	TS	21.4	C	27.1	C
2.	State Street at Crows Nest	CSS	17.5	C	21.2	C
3.	State Street at Fruitvale Avenue	TS	12.1	B	11.0	B
4.	State Street at Menlo Avenue	TS	31.8	C	41.1	D
5.	State Street at Devonshire Avenue	TS	16.1	B	16.5	B
6.	State Street at Florida Avenue	TS	22.4	C	29.2	C
7.	Project West Access at Crows Nest	CSS	-		-	

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop
- (2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

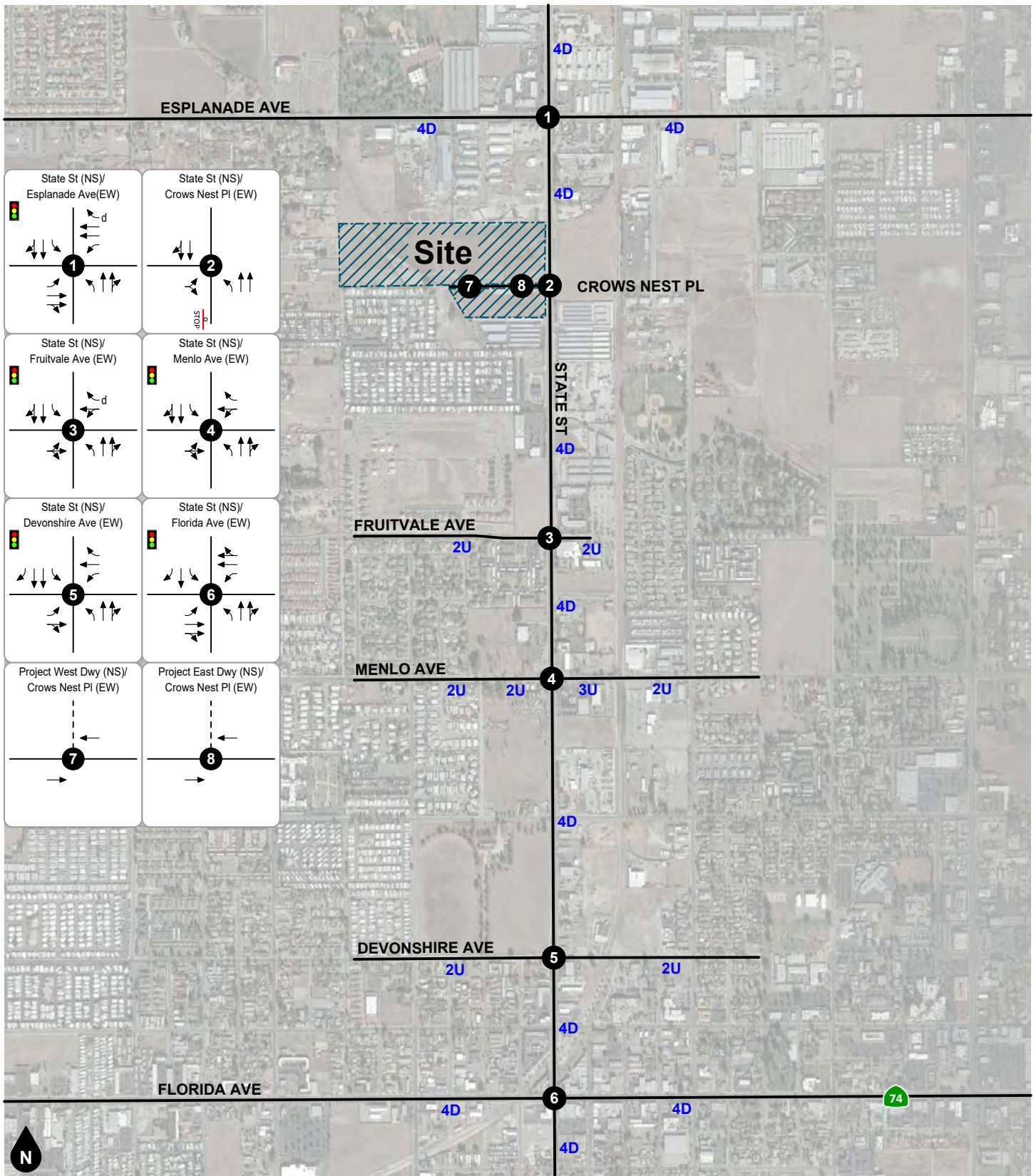
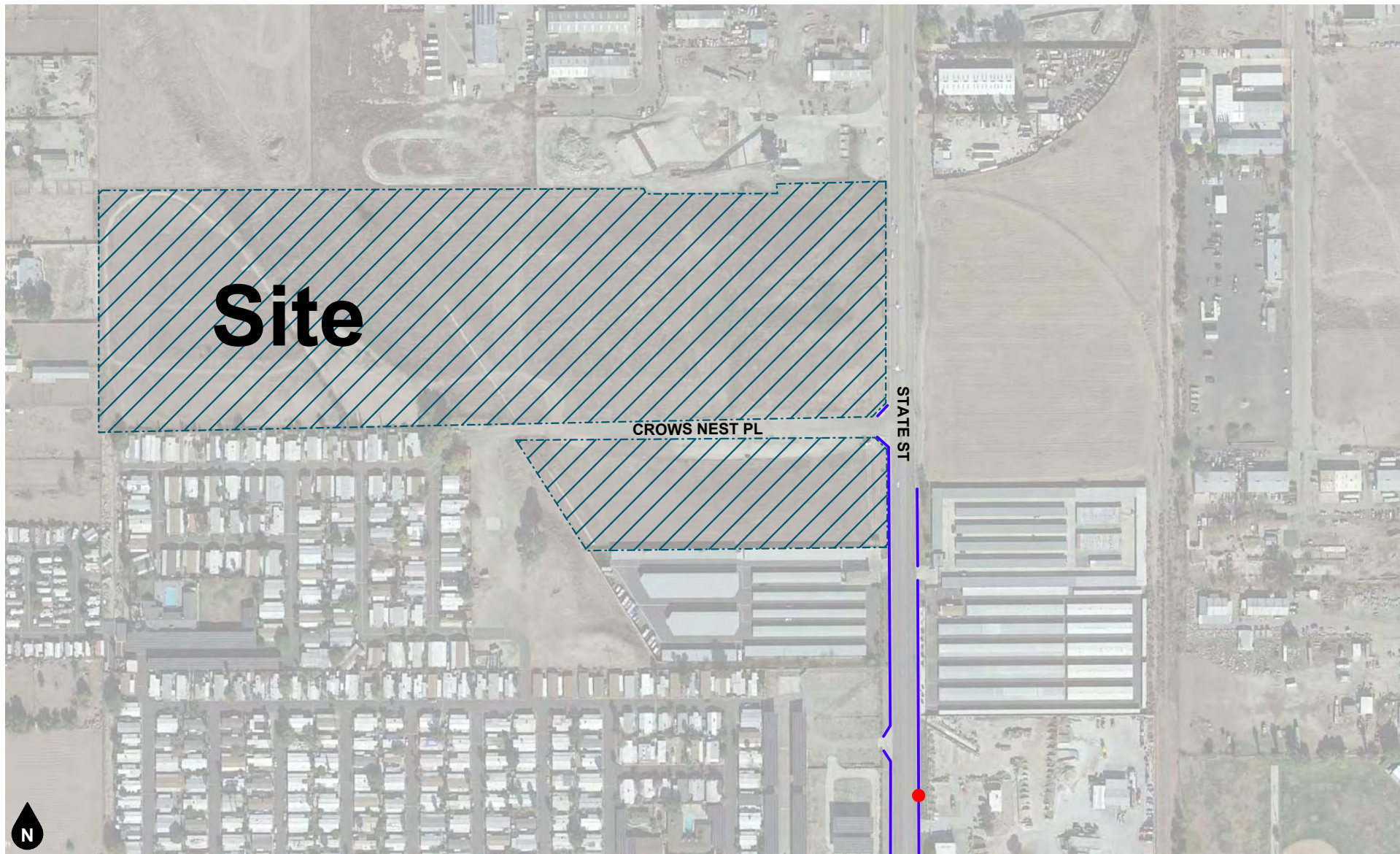


Figure 3
Existing Lane Geometry and Intersection Traffic Controls



Legend

- Sidewalk
- Bus Stop

Figure 4
Existing Pedestrian Facilities

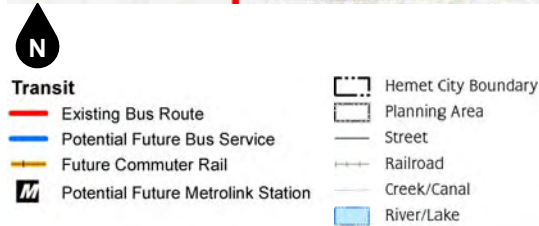
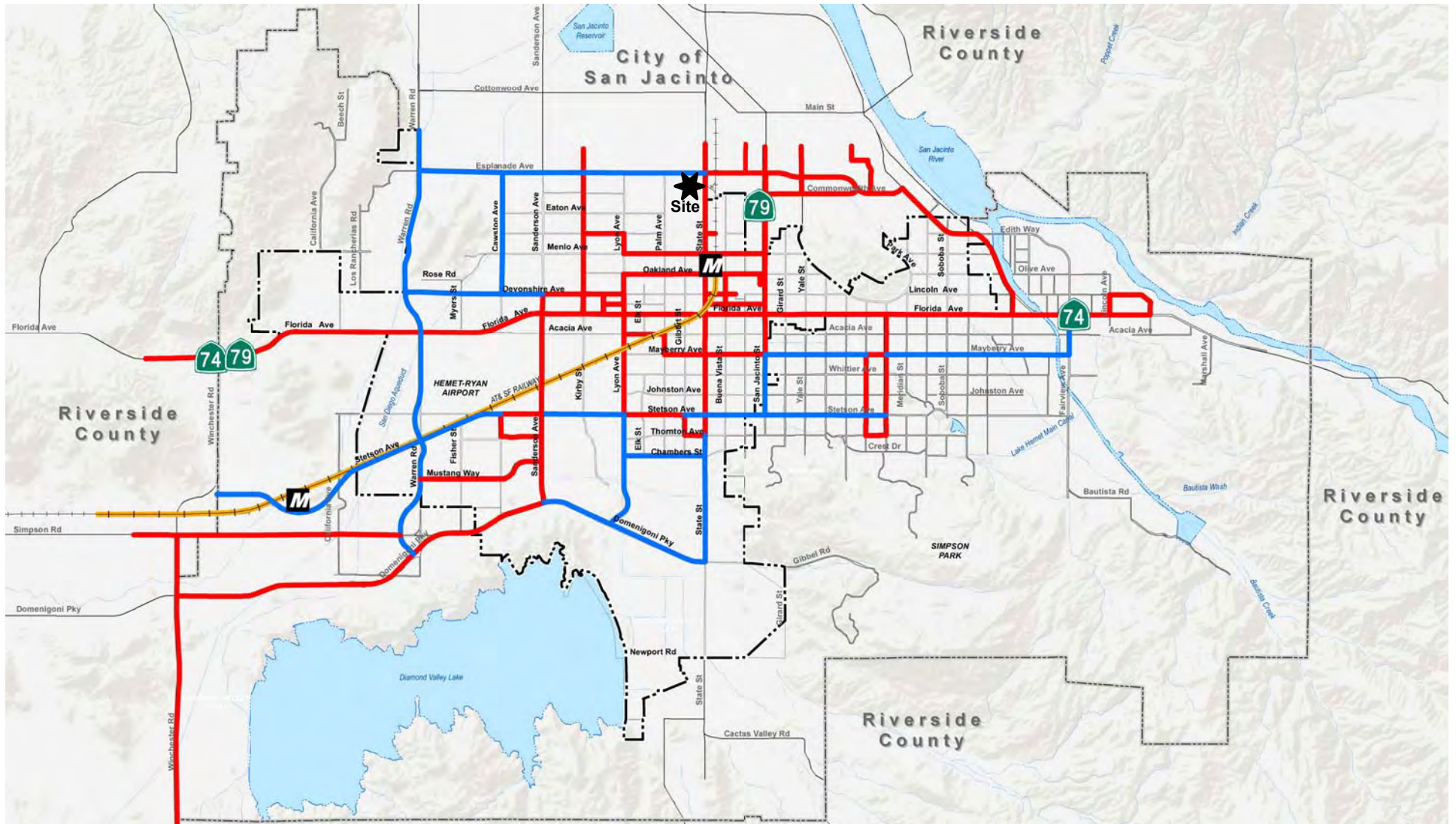


Figure 5
City of Hemet Transit Routes

Source: City of Hemet

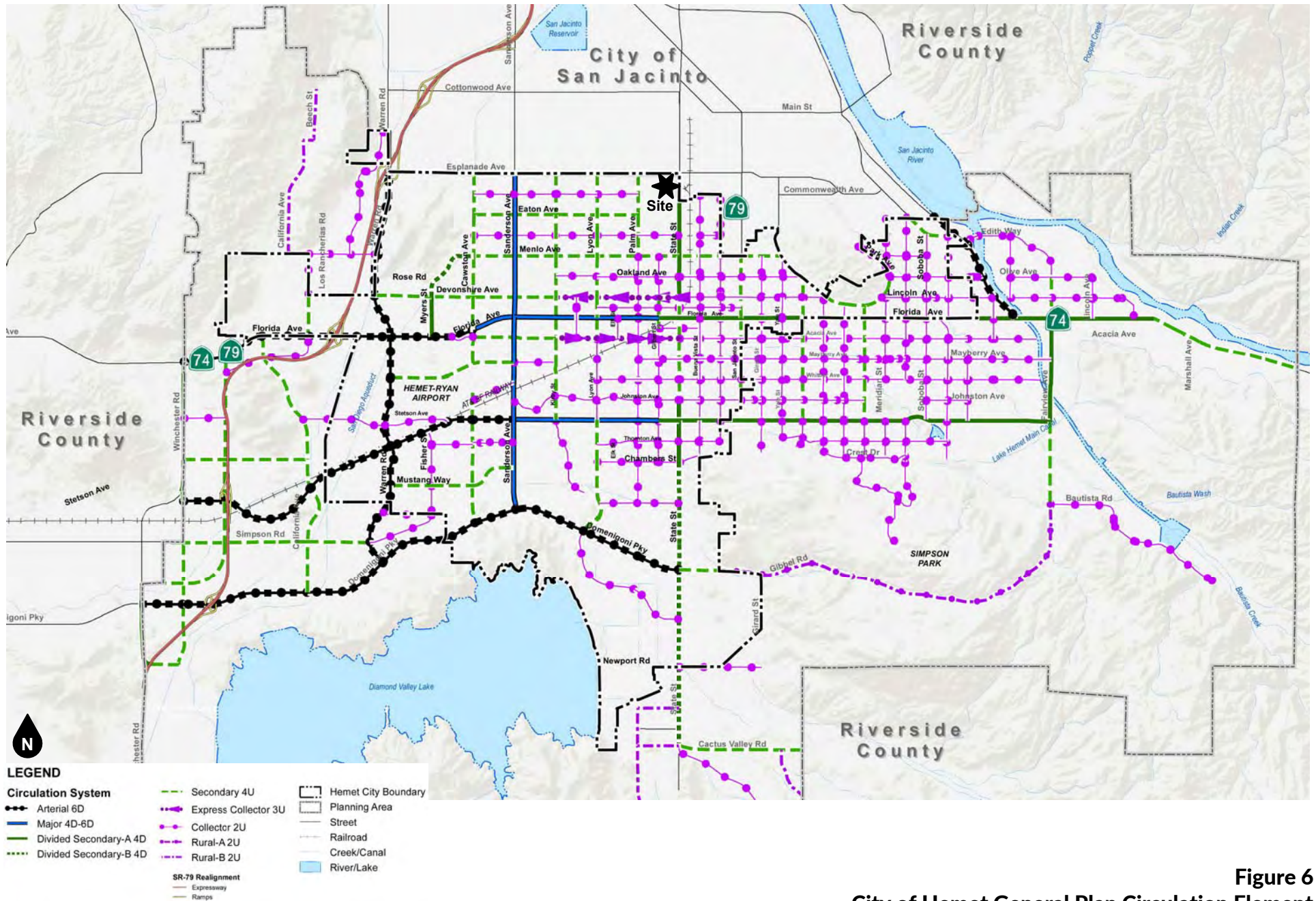


Figure 6
City of Hemet General Plan Circulation Element

Source: City of Hemet

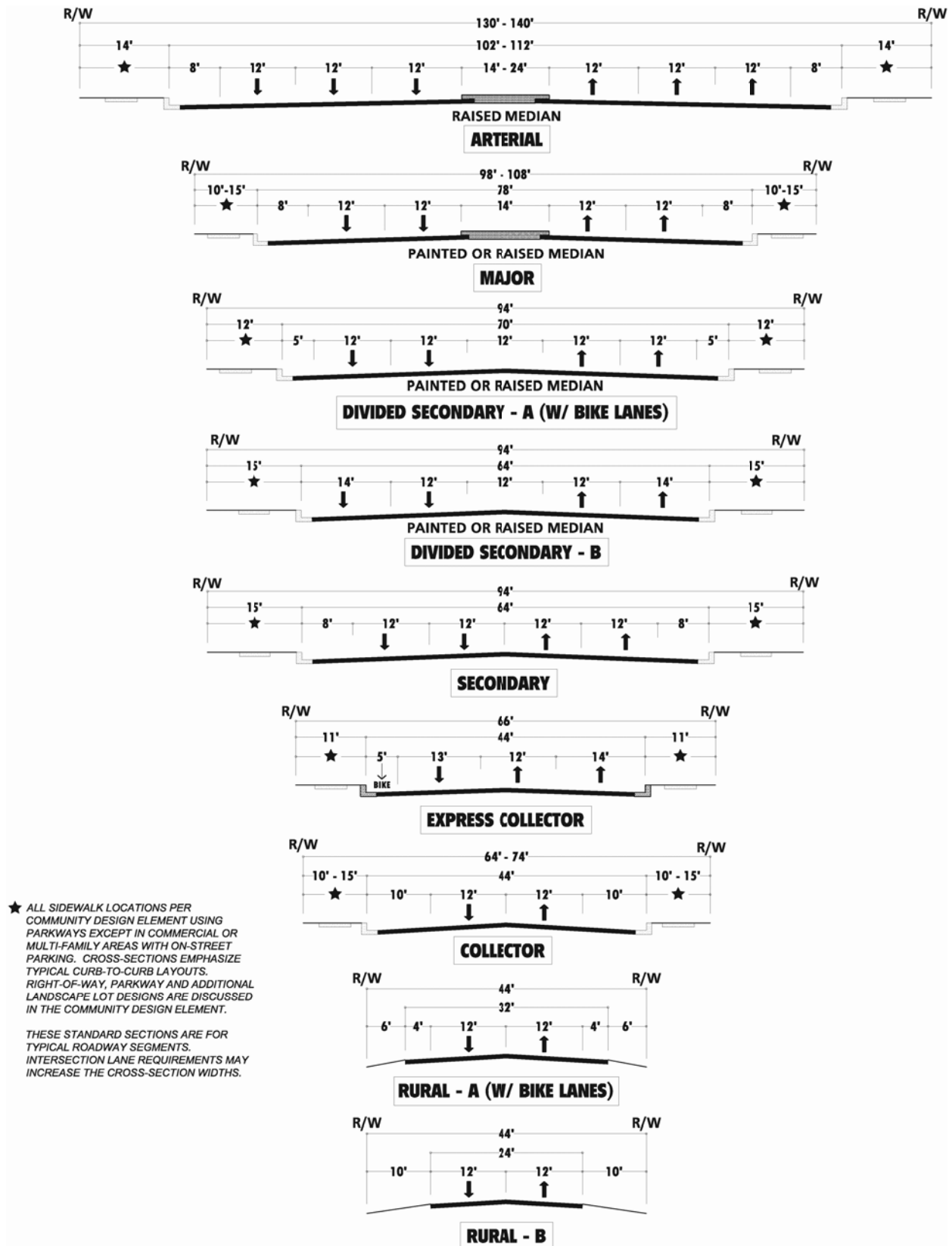
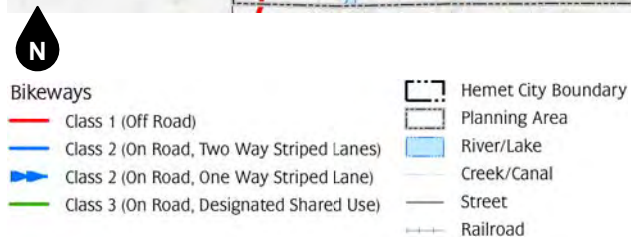
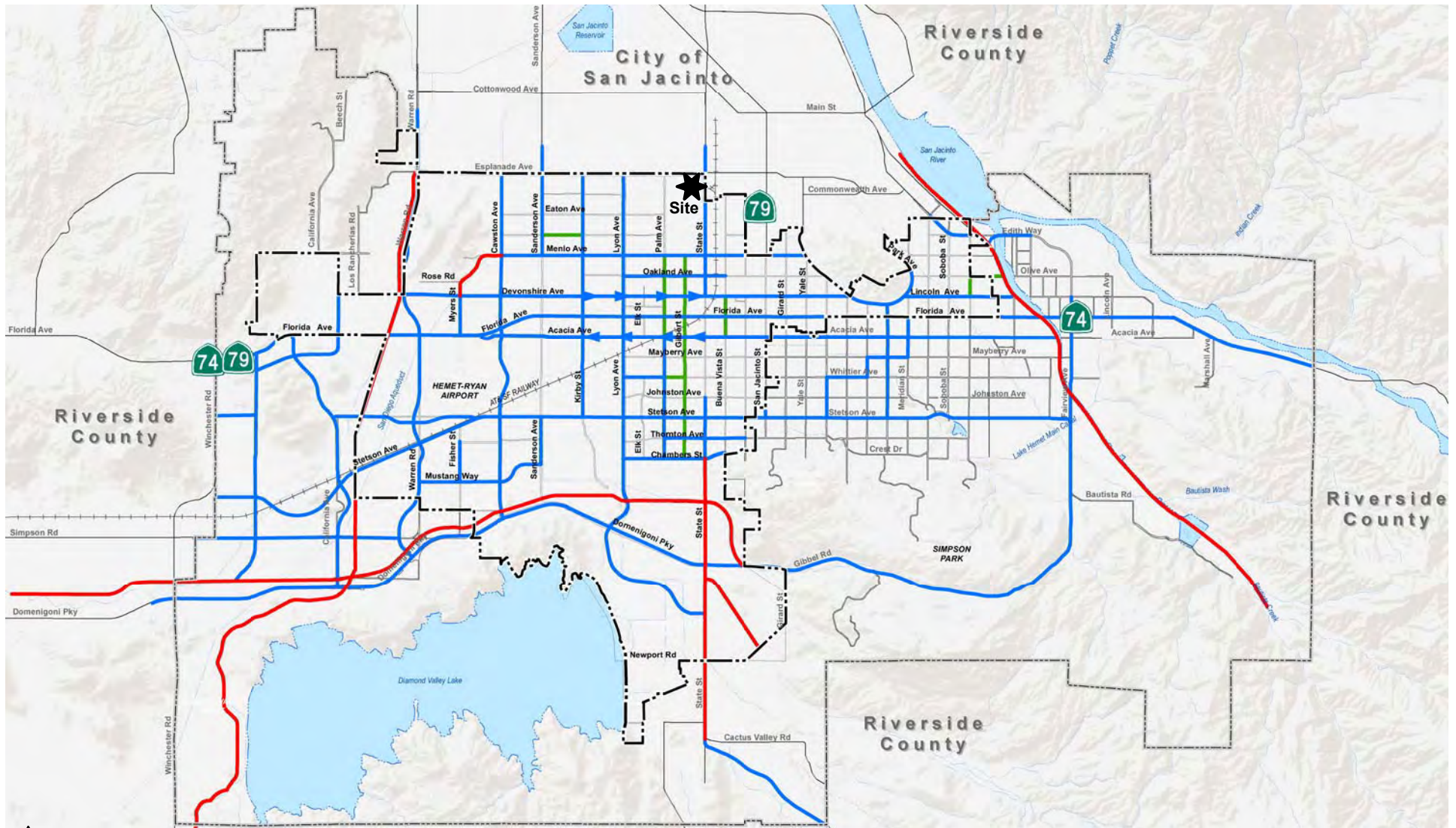


Figure 7
City of Hemet General Plan Roadway Cross-Sections

Source: City of Hemet



Source: City of Hemet



Figure 8
City of Hemet General Plan Bike Routes

S2A Modular Manufacturing
Traffic Impact Analysis
19-0164

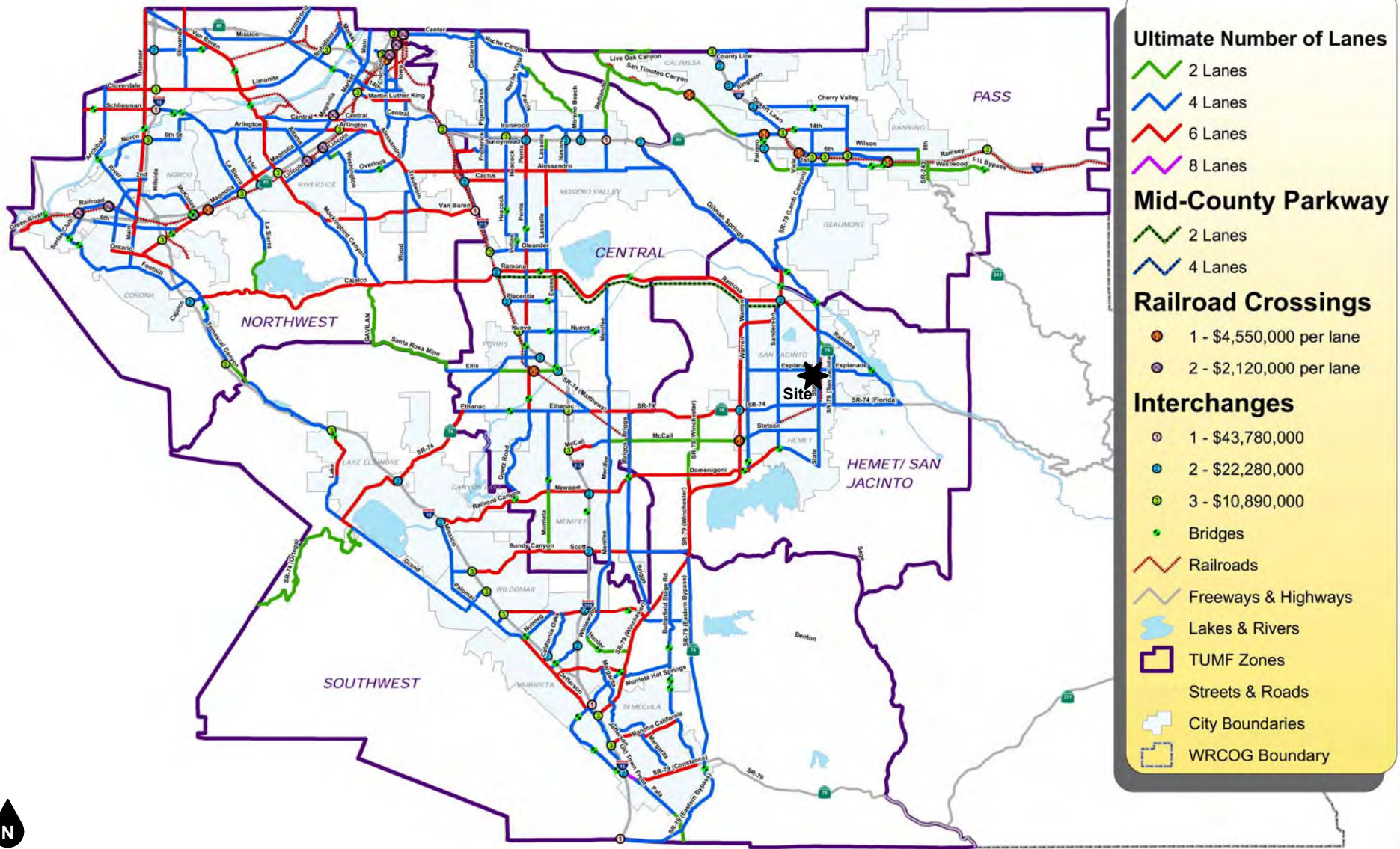
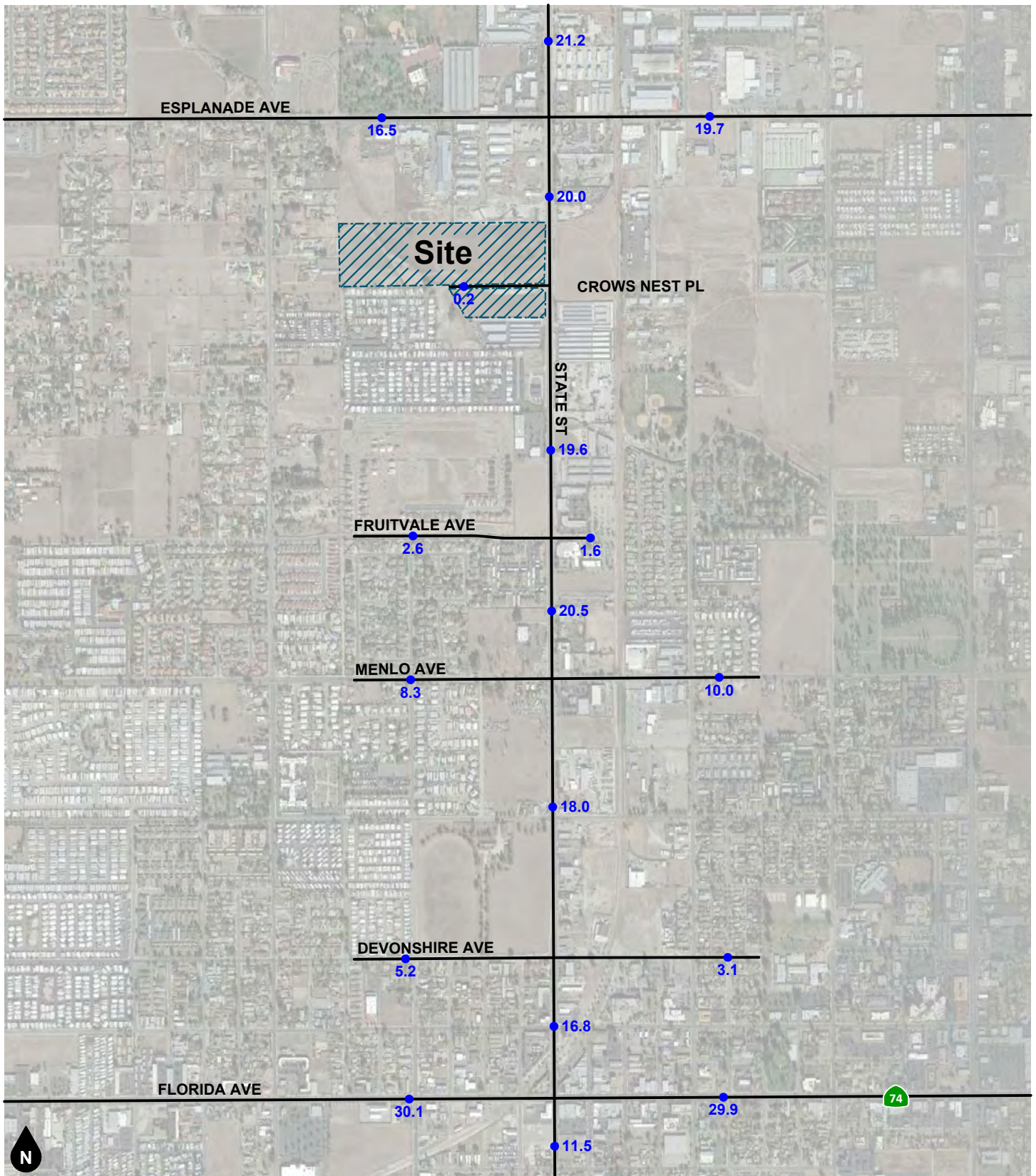


Figure 9
City of Hemet General Plan Roadway Truck Routes

Source: City of Hemet



Legend

●## Vehicles Per Day (1,000's)

Figure 10
Existing Average Daily Traffic Volumes

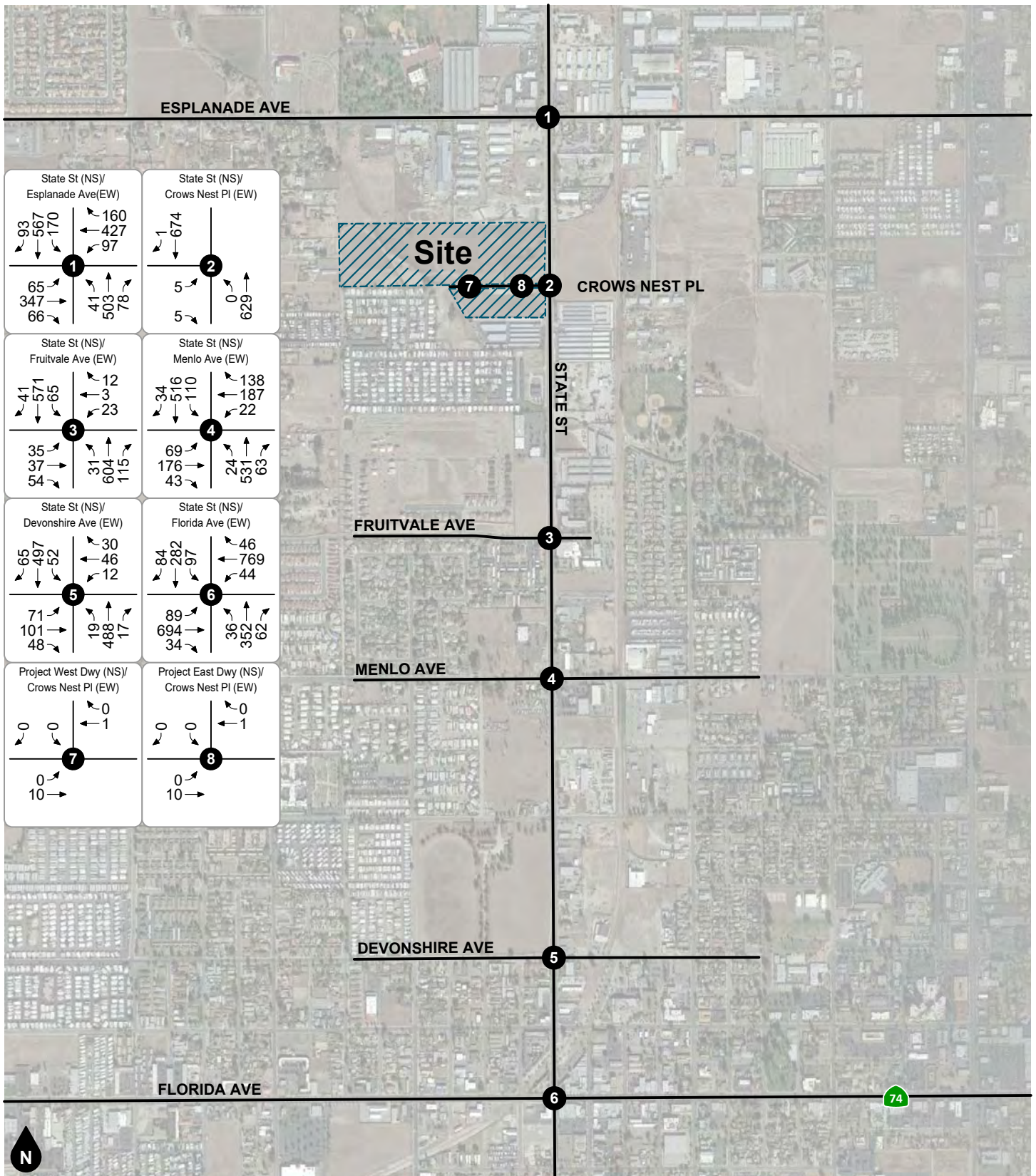


Figure 11
Existing AM Peak Hour Intersection Turning Movement Volumes

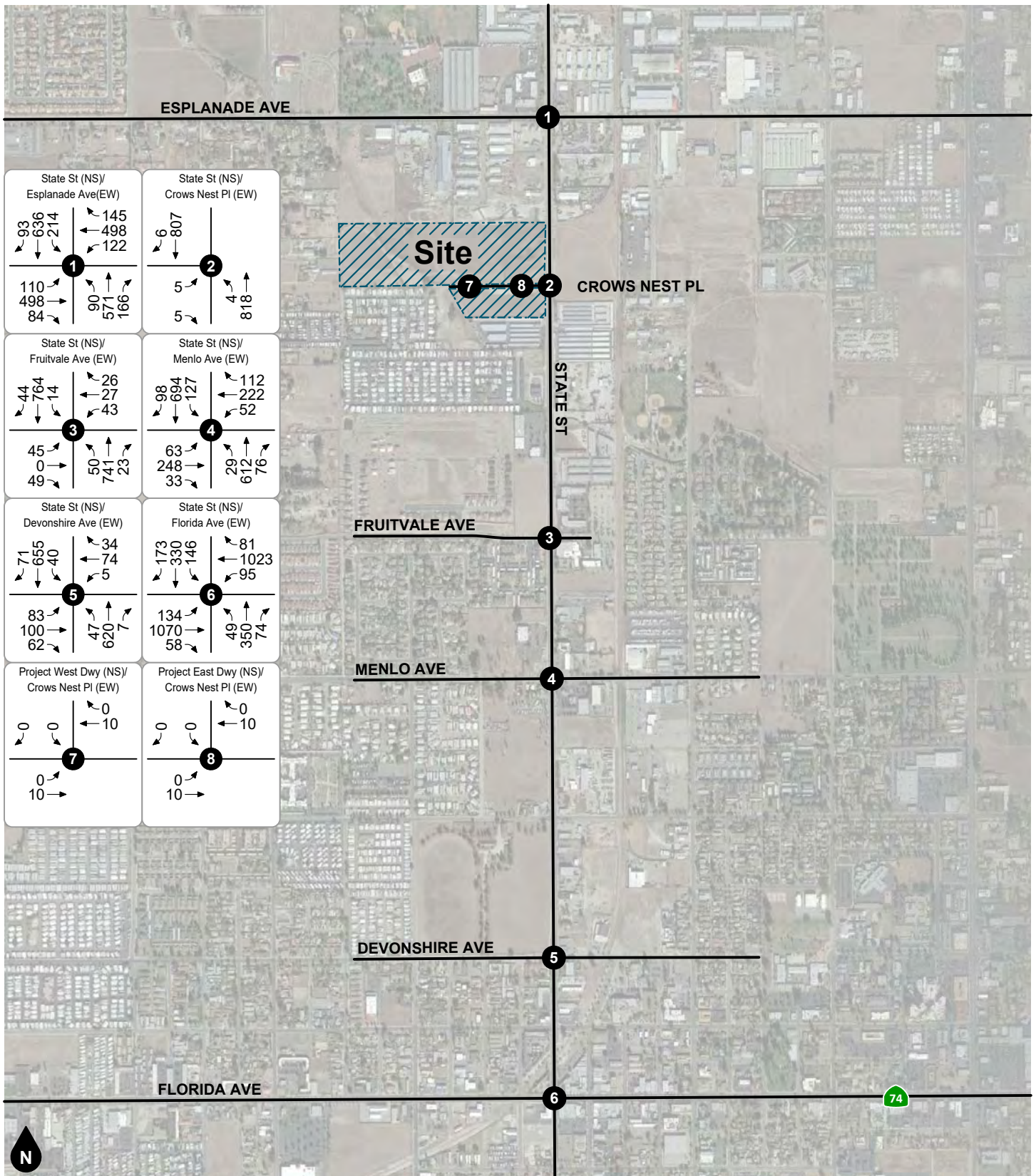


Figure 12
 Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT TRIP GENERATION

Table 2 shows the project trip generation based upon trip generation rates obtained from the Institute of Transportation Engineers Trip Generation Manual (10th Edition, 2017) Land Use Codes 140. The total number of vehicle trips forecast to be generated by the proposed project is determined by multiplying the trip generation rates by the land use quantities.

Passenger Car Equivalent Adjustment

The project-generated vehicle trips were then separated into passenger cars and trucks (by number of axles) and converted to Passenger Car Equivalent (PCE) trips based upon car-truck percentages obtained from the City of Fontana Truck Trip Generation Study (August 2003). The total percentage of truck trips for manufacturing land use was obtained from the City of Fontana Truck Trip Generation Study for the light industrial land use. The total number of truck trips are converted into PCE trips based on PCE factors recommended by the County of San Bernardino Congestion Management Program (1.5 PCEs for 2-axle trucks, 2.0 PCEs for 3-axle trucks, and 3.0 PCEs for trucks with 4 or more axles).

As shown in Table 2, Project Phase 1 is forecast to generate a total of approximately 439 daily vehicle trips, including 70 vehicle trips during the AM peak hour and 75 vehicle trips during the PM peak hour. In PCE trips, Project Phase 1 is forecast to generate a total of approximately 564 daily PCE trips, including 106 PCE trips during the AM peak hour and 99 PCE trips during the PM peak hour.

As also shown in Table 2, completion of the proposed project is forecast to generate a total of approximately 983 daily vehicle trips, including 156 vehicle trips during the AM peak hour and 168 vehicle trips during the PM peak hour. In PCE trips, completion of the proposed project is forecast to generate a total of approximately 1,262 daily PCE trips, including 237 PCE trips during the AM peak hour and 220 PCE trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Figure 13 and Figure 14 show the forecast directional distributions of the project generated passenger car and truck trips. Passenger car trips are generally more localized with residential or commercial origin/destination points, whereas truck trips generally have a more regional distribution travelling to/from other industrial uses or ports/terminals via the freeway. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, designated truck routes, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 15. The project AM and PM peak hour intersection turning movement volumes for fully operational completion Year (2024) conditions are depicted on Figure 16 and Figure 17, respectively.

PROJECT CONSTRUCTION TRIPS

Compared to the project trip generation, trip generation associated with construction of the proposed project is forecast to be temporary and lower than trips generated upon completion. In general, site development would require the use of haul trucks during site clearing and excavation and the use of a variety of other construction vehicles throughout the construction work at the site. The project is required to comply with all

City of Hemet standard conditions pertaining to construction, including work hours, traffic control plan, haul route, access, oversized-vehicle transportation permit, site security, noise, vehicle emissions and dust control. Use of oversized vehicles will require the appropriate transportation permit.

A construction work (temporary) traffic control plans are required by State law in accordance with the standards set forth in the California Manual of Uniform Traffic Control Devices (2014), and shall be submitted to the City of Hemet prior to the issuance of a grading permit or the start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closure and/or detour as well as haul routes and hours of operation. Whenever possible, construction related truck trips should be restricted to off-peak hours, to the extent that conditions permit.

Table 2
Project Trip Generation

Land Use/Vehicle Type	Source ¹	Trip Generation Rates per TSF ²						
		AM Peak Hour			PM Peak Hour			Daily
		% In	% Out	Total	% In	% Out	Total	
Manufacturing	ITE 140	77%	23%	0.62	31%	69%	0.67	3.93
Percent Cars	[a]	--	--	60.53%	--	--	76.83%	78.60%
Percent Trucks	[a]	--	--	39.47%	--	--	23.17%	21.40%
Car Trips per TSF		0.289	0.086	0.375	0.160	0.355	0.515	3.089
Truck Trips per TSF		0.188	0.056	0.244	0.048	0.107	0.155	0.841
<u>Truck Breakdown by Axle</u>	<u>Percent³</u>							
2-Axle Trucks	32.70%	0.061	0.018	0.079	0.016	0.035	0.051	0.275
3-Axle Trucks	17.90%	0.034	0.010	0.044	0.009	0.019	0.028	0.151
4+ Axle Trucks	49.40%	0.093	0.028	0.121	0.024	0.053	0.077	0.415

Vehicle Trips Generated								
Land Use/Vehicle Type	Quantity (TSF)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Manufacturing	250,000							
Cars		72	22	94	40	89	129	772
Trucks								
2-Axle Trucks		15	5	20	4	9	13	69
3-Axle Trucks		9	3	11	2	5	7	38
4+ Axle Trucks		23	7	30	6	13	19	104
Subtotal Trucks		47	15	61	12	27	39	211
Subtotal Phase 1	111,750	53	17	70	23	52	75	439
Subtotal Phase 2	138,250	66	20	86	29	64	93	544
TOTAL VEHICLE TRIPS GENERATED		119	37	156	52	116	168	983

Passenger Car Equivalent (PCE) Trips Generated								
Land Use/Vehicle Type	Quantity (TSF)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Manufacturing	250,000							
Cars		72	22	94	40	89	129	772
Trucks	<u>PCE Factor⁴</u>							
2-Axle Trucks	1.5	23	7	30	6	13	19	103
3-Axle Trucks	2.0	17	5	22	5	9	14	76
4+ Axle Trucks	3.0	70	21	91	18	40	58	311
Subtotal Trucks	--	110	33	143	29	62	91	490
Phase 1 (Cars)	111,750	32	10	42	18	40	58	345
Phase 1 (Trucks)		49	15	64	13	28	41	219
Subtotal Phase 1		81	25	106	31	68	99	564
Phase 2 (Cars)	138,250	40	12	52	22	49	71	427
Phase 2 (Trucks)		61	18	79	16	34	50	271
Subtotal Phase 2		101	30	131	38	83	121	698
TOTAL VEHICLE TRIPS GENERATED		182	55	237	69	151	220	1,262

Notes:

(1) Source:

ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Code ### (page 40 to 41).

[a] City of Fontana, Truck Trip Generation Study, August 2003. Light industrial values used for manufacturing (page 13 and 22).

(2) TSF = Thousand Square Feet

(3) Truck by axle percentages obtained from City of Fontana, Truck Trip Generation Study, August 2003.

(4) PCE factors recommended by County of San Bernardino Congestion Management Program.

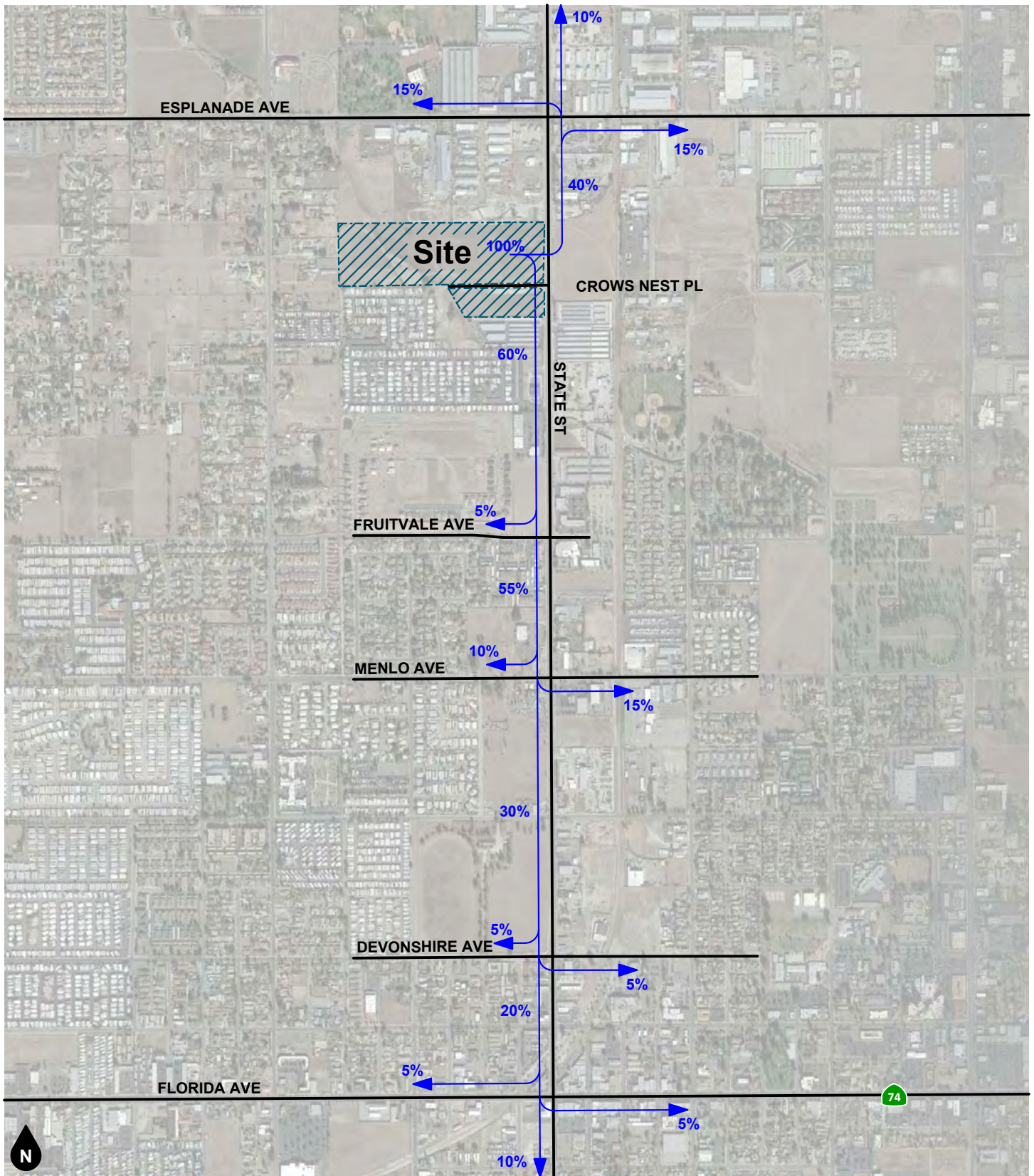


Figure 13
Project Trip Distribution - Car

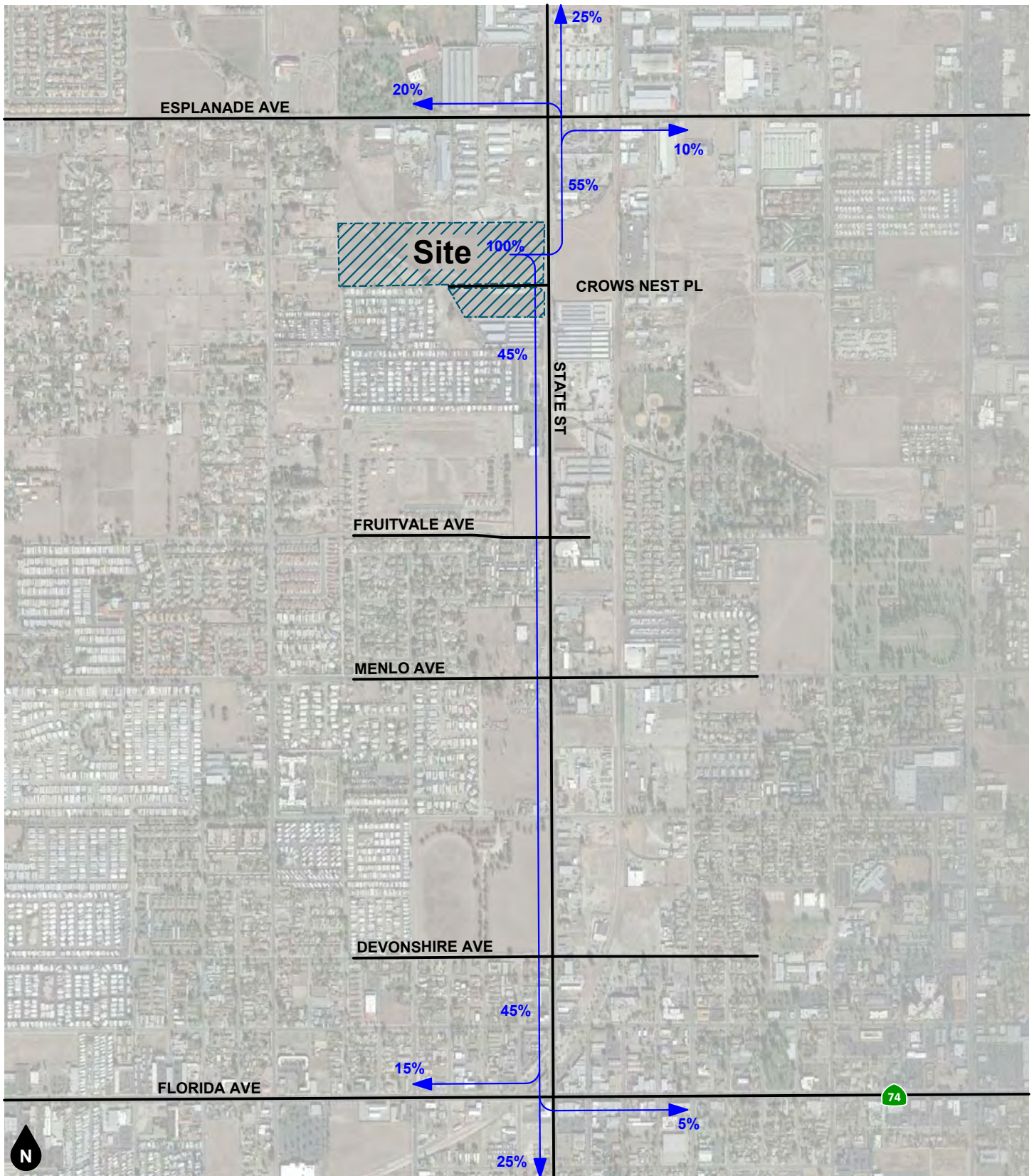
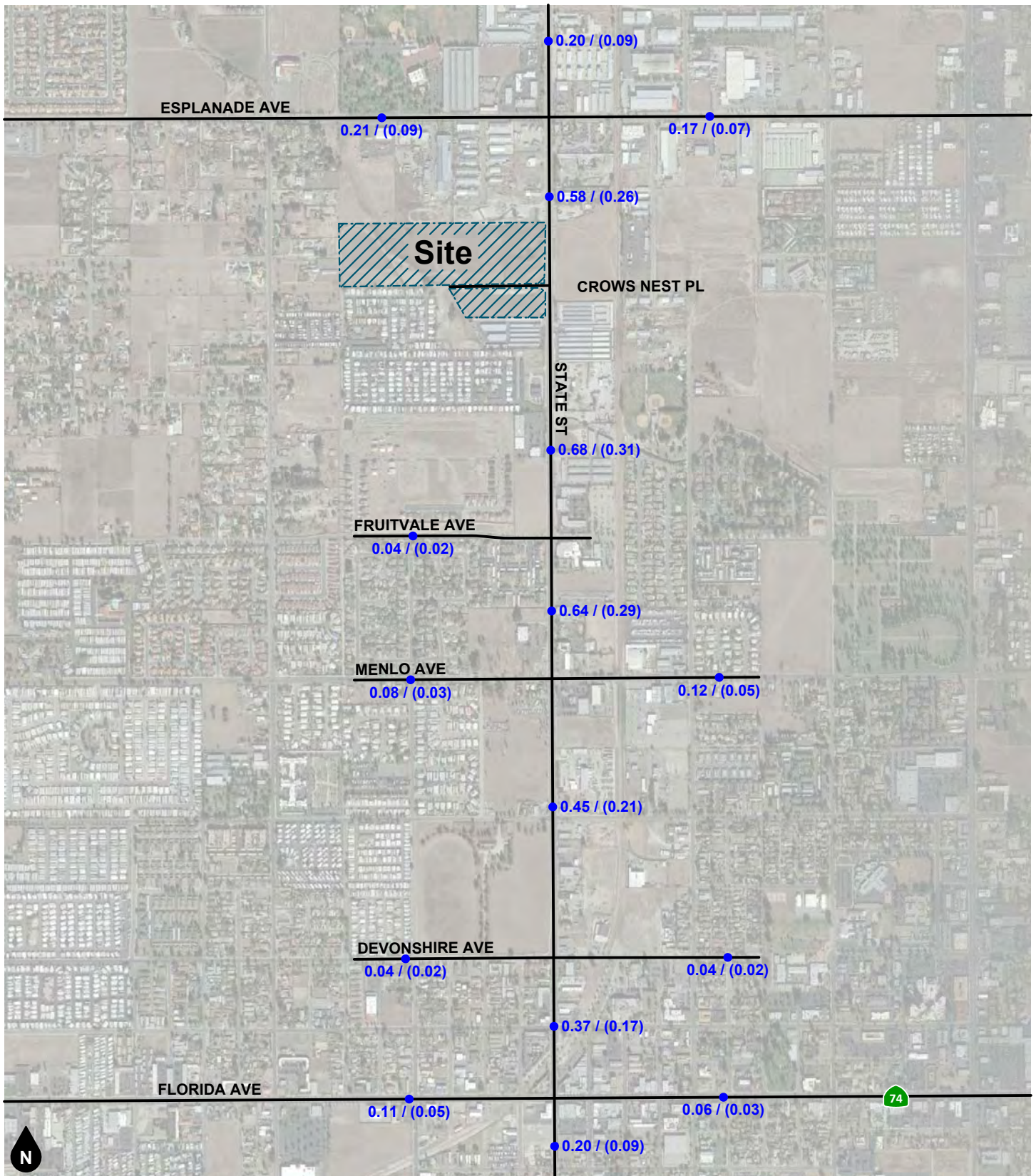


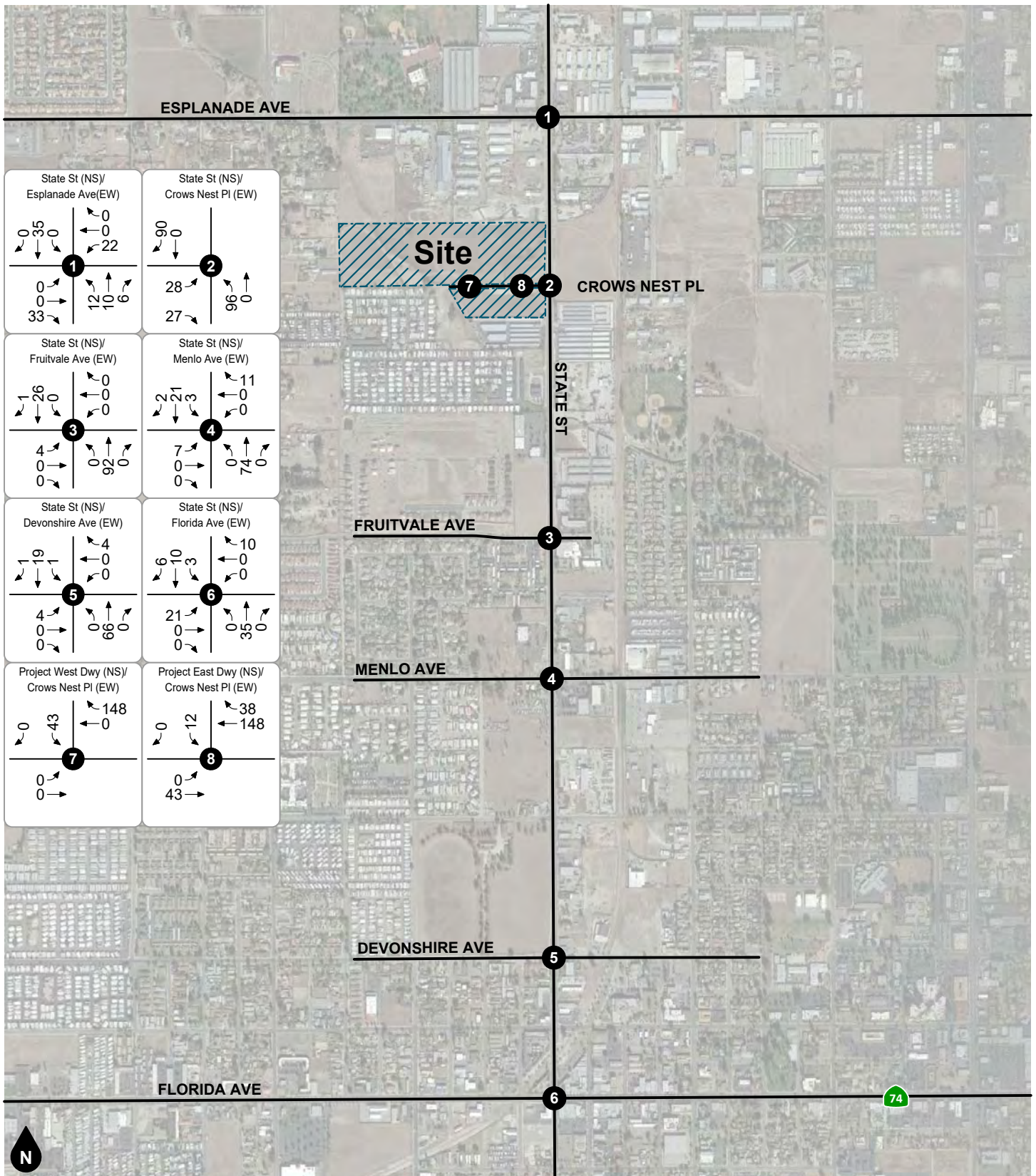
Figure 14
Project Trip Distribution - Truck



Legend

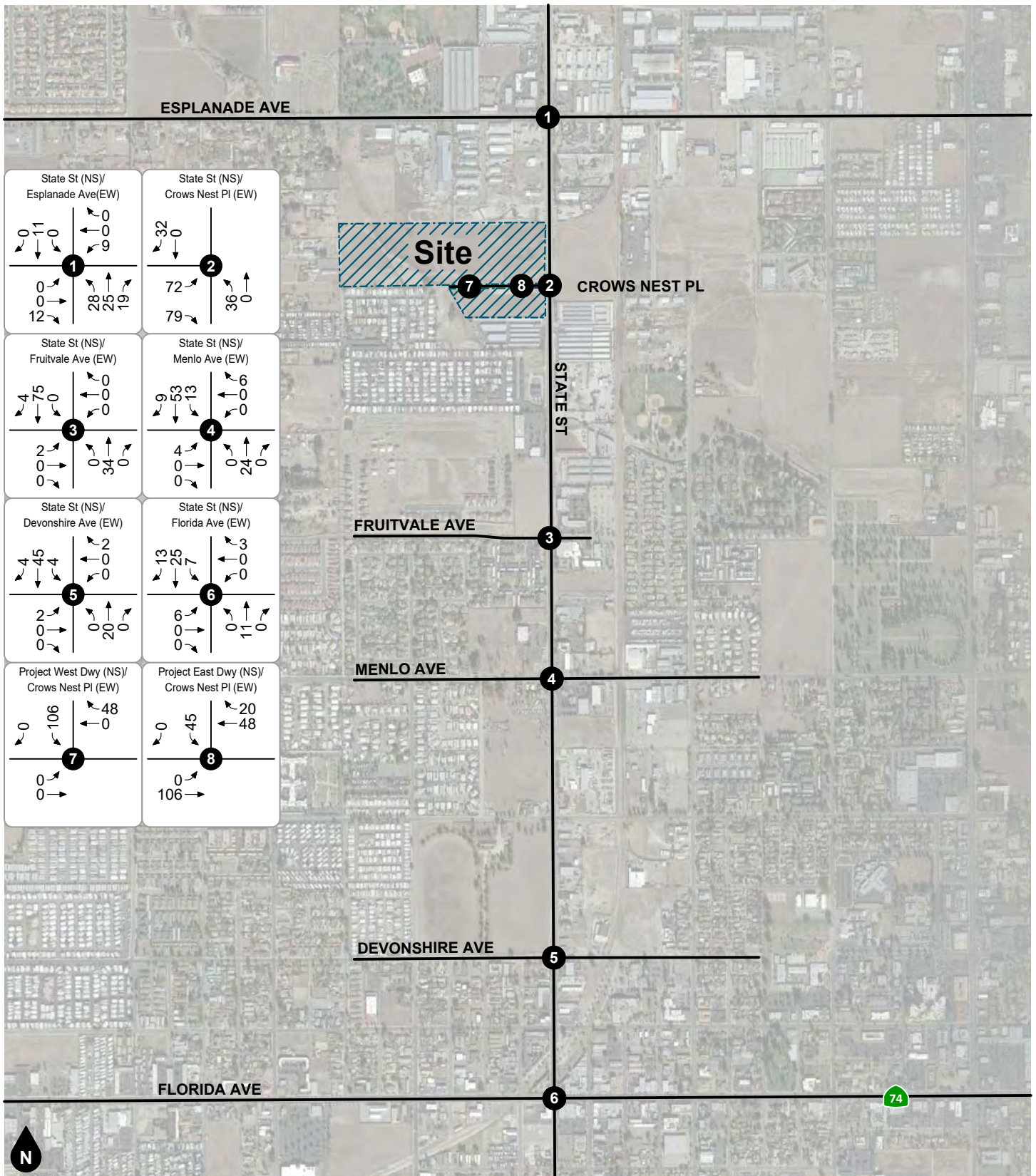
●## Vehicles Per Day (1,000's)
(Phase 1) / Phase 2 Buildout

Figure 15
Project Average Daily Traffic Volumes



Legend
 # Study Intersection

Figure 16
 Project AM Peak Hour Intersection Turning Movement Volumes



Legend
 # Study Intersection

Figure 17
 Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

OPENING YEAR (2021) PROJECTIONS

The Opening Year (2021) volume forecasts were developed by adding regional ambient growth, project trips, and other development trips to existing volumes.

Ambient Growth Rate

To account for ambient growth on roadways, existing traffic volumes were increased by a growth rate of two percent (2%) per year. For Opening Year (2021) conditions, ambient growth is over two (2) years and equates to a total growth factor of approximately 1.04. The ambient growth rate was conservatively applied to all movements at the study intersections.

Other Development

To account for trips generated by future development, trips generated by pending or approved other development projects in the of City of Hemet were added to the study area. The regional ambient growth is assumed to account for any additional trips generated by other developments projects located outside the project vicinity and not specifically listed in this report. Table 3 shows the trip generation summary for other development projects. Figure 18 shows the other development location map.

Figure 19 shows the forecast average daily traffic volumes for the other developments. Figure 20 and Figure 21 show the forecast AM and PM peak hour intersection turning movement volumes for trips generated by other developments in opening year (2021).

COMPLETION YEAR (2024) PROJECTIONS

Similarly, the Completion Year (2024) volume forecasts were developed by adding regional ambient growth, project trips, and other development trips to existing volumes. For Completion Year (2024) conditions, ambient growth is over five (5) years and equates to a total growth factor of approximately 1.10.

ANALYSIS SCENARIO VOLUME FORECASTS

Existing Plus Project

Existing Plus Project volume forecasts were derived by adding the project-generated trips to Existing volumes. Existing Plus Project average daily traffic volumes are shown on Figure 22. Existing Plus Project AM and PM peak hour intersection turning movement volumes are shown on Figure 23 and Figure 24.

Opening Year (2021) Plus Project (EAGP)

To develop Opening Year (2021) Plus Project (EAGP) volume forecasts, Existing volumes were combined with ambient growth and trips generated by the proposed project. Opening Year (2021) Plus Project (EAGP) average daily traffic volumes are shown on Figure 25. Opening Year (2021) Plus Project (EAGP) AM and PM peak hour intersection turning movement volumes are shown Figure 26 and Figure 27.

Opening Year (2021) Plus Project Plus Cumulative (EAGPC)

Opening Year (2021) Plus Project Plus Cumulative (EAGPC) volumes were developed by adding other development trips to the Opening Year (2021) Plus Project (EAGP) forecast volumes. Opening Year (2021) Plus Project Plus Cumulative (EAGPC) average daily traffic volumes are shown on Figure 28. Opening Year (2021) Plus Project Plus Cumulative (EAGPC) AM and PM peak hour intersection turning movement volumes are shown on Figure 29 and Figure 30.

Completion Year (2024) Plus Project (EAGP)

To develop Completion Year (2024) Plus Project (EAGP) volume forecasts, Existing volumes were combined with ambient growth and trips generated by the proposed project. Completion Year (2024) Plus Project (EAGP) average daily traffic volumes are shown on Figure 31. Completion Year (2024) Plus Project (EAGP) AM and PM peak hour intersection turning movement volumes are shown Figure 32 and Figure 33.

Completion Year (2024) Plus Project Plus Cumulative (EAGPC)

Completion Year (2024) Plus Project Plus Cumulative (EAGPC) volumes were developed by adding other development trips to the Completion Year (2024) Plus Project (EAGP) forecast volumes. Completion Year (2024) Plus Project Plus Cumulative (EAGPC) average daily traffic volumes are shown on Figure 34. Completion Year (2024) Plus Project Plus Cumulative (EAGPC) AM and PM peak hour intersection turning movement volumes are shown on Figure 35 and Figure 36.

Table 3 (1 of 2)
Cumulative Other Development Trip Generation

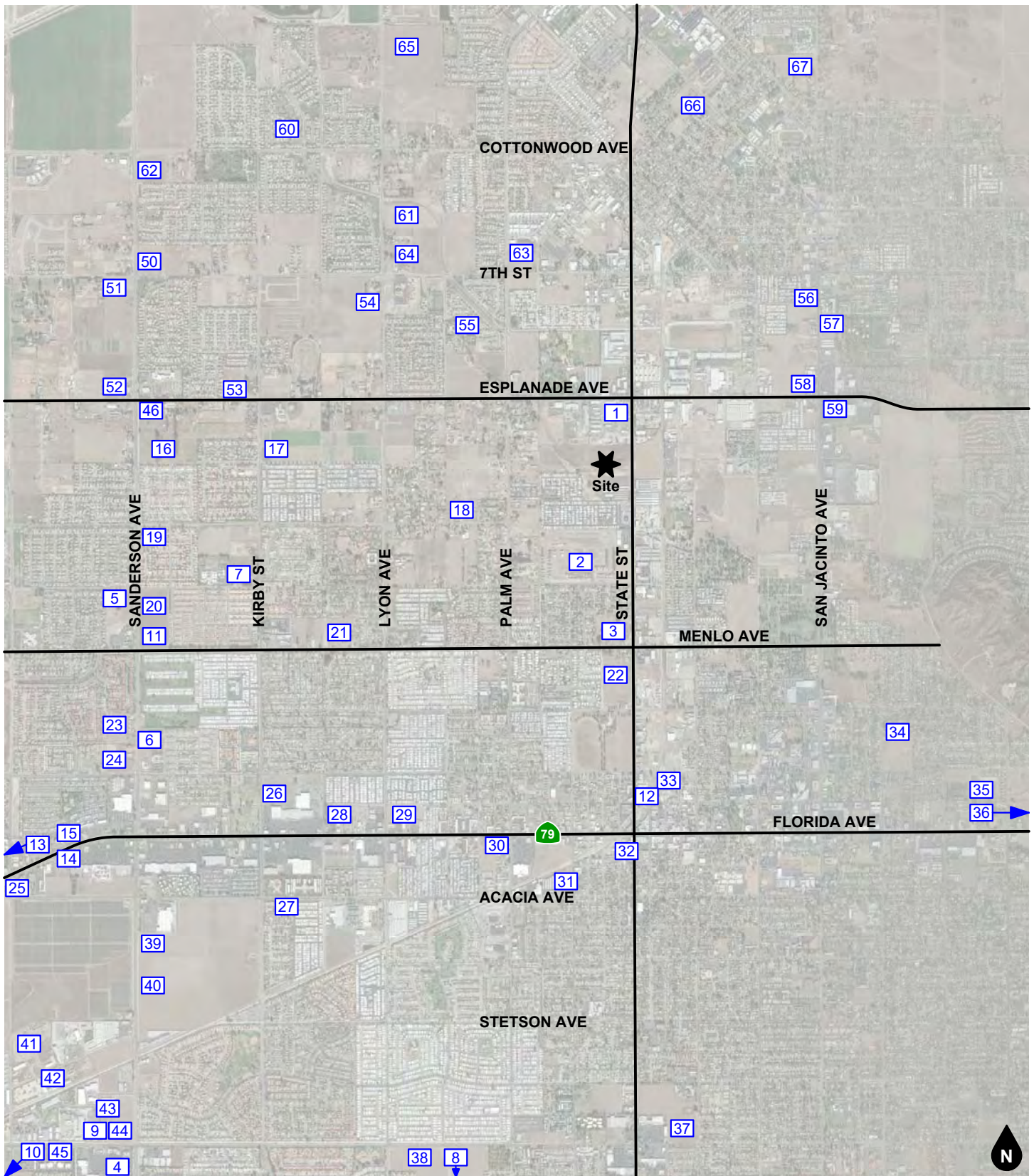
City/ County	ID	Project No./Address/Name	Land Use	Source ¹	Quantity	Units ²	AM Peak Hour			PM Peak Hour			Daily
							In	Out	Total	In	Out	Total	
City of Hemet	1	CUP 18-005	Car Sales (Used)	841	2,560	TSF	4	1	5	5	5	10	69
	2	SDR 18-001 The Hideaway	Single-Family Detached	210	71	DU	13	40	53	44	26	70	670
	3	SDR 15-001 Sante Fe Point	Multi-Family Residential	220	50	DU	5	18	23	18	10	28	366
	4	CUP18-006 Page Plaza Starbucks ⁵	Coffee Shop with Drive-thru	937	2,500	TSF	113	109	222	54	54	108	2,051
		NWC Sanderson Ave/Thornton Ave	Fast Food with Drive-thru	934	3,700	TSF	76	73	149	63	58	121	1,743
	5	CUP16-008 Shop N Go Plaza ⁵	Gas Station Convenience Store	945	16	FP	102	98	200	114	110	224	3,286
		SWC Sanderson Ave/Fruitvale Ave	Fast Food with Drive-thru	934	3,278	TSF	67	65	132	56	51	107	1,544
			Pharmacy with Drive-Thru	881	17,500	TSF	36	31	67	90	90	180	1,910
	6	ZC15-001 Sanderson Apartments ⁵	Multi-Family Residential	220	139	DU	15	49	64	49	29	78	1,017
	7	ZC15-002 TTM36929 (BNR) ⁵	Single-Family Detached	20	71	DU	13	40	53	44	26	70	670
	8	TTM 36891-36892 River Oaks ⁶	Single-Family Detached	210	158	DU	29	88	117	99	57	156	1,492
		SEC/SWC Elk Street/Thornton Ave											
	9	CUP17-004 TTM37421 Rancho McHolland Retail ⁷	Gas Station Convenience Store	945	12	FP	76	74	150	86	82	168	2,464
		SEC Sanderson Ave / Stetson Ave	Carwash	DATA	120	LF	30	25	55	46	49	95	1,014
	10	TTM 36841 Rancho Diamante Ph2 SP	Single-Family Detached	210	586	DU	108	326	434	365	215	580	5,532
		SWC Warren Rd / Stetson Ave (future)	Park	411	64.89	AC	1	0	1	4	3	7	51
			Commercial Retail	820	19.67	AC	11	7	18	36	39	75	743
	11	CUP 16-006 Zanderson Plaza ⁸	Gas Station Convenience Store	945	20,000	TSF	127	122	249	143	137	280	4,107
		NEC Sanderson Ave/Menlo Ave	Fast Food with Drive-thru	934	15,250	TSF	313	300	613	259	239	498	7,182
			Shopping Center	820	42,230	TSF	25	15	40	77	84	161	1,594
			Trip Credits Pass-by				- 178	- 173	- 351	- 179	- 174	- 353	- 4,183
	12	Downtown Hemet Specific Plan ⁹	Single-Family Detached	210	15	DU	3	8	11	9	6	15	142
			Multi-Family Residential	220	161	DU	17	57	74	57	33	90	1,179
			Commercial	820	90,780	TSF	53	32	85	166	180	346	3,427
		Gilbert to Sante Fe Street / Oakland to Acacia Ave	General Office Building	710	151,327	TSF	151	25	176	28	146	174	1,474
			Trip Credits Existing Land Uses				- 121	- 96	- 217	- 108	- 137	- 245	- 2,221
	13	SP12-001 (Ramona Creek)	Residential		954	DU	95	395	491	321	160	481	5,030
			Elementary School (K-6)		750	STU	158	129	287	45	51	96	822
			General Office		113,256	TSF	181	20	202	24	153	177	1,162
			Junior/Community College		166,000	TSF	349	123	472	232	169	401	4,335
			Shopping Center		113,256	TSF	198	118	317	406	427	833	13,605
			Passive Park		25.9	AC	3	3	5	2	2	4	41
			Community Park		11.2	AC	36	36	73	25	25	50	560
			Internal Capture				- 102	- 83	- 185	- 106	- 98	- 204	- 2,556
	14	SP 06-04 Florida Promenade	Commercial	820	100,000	TSF	217	61	278	97	249	346	3,480
	15	SP-06 Florida Promenade Residential	Senior Adult Housing Attached	252	440	DU	31	57	88	63	51	114	1,628
			Single-Family Detached	210	145	DU	27	80	107	90	54	144	1,369
	16	TTM 29581 Covenant	Single-Family Detached	210	71	DU	13	40	53	44	26	70	670
	17	TTM 31064 Kirby	Single-Family Detached	210	73	DU	14	40	54	46	26	72	689
	18	TTM 37087	Single-Family Detached	210	20	DU	4	11	15	12	8	20	189
	19	SandFruit Shopping Center	Commercial	820	92,000	TSF	54	32	86	168	183	351	3,473
	20	Skilled Nursing Facility	Assisted Living Facility	254	106,180	TSF	32	9	41	15	36	51	445
	21	TTM 33858	Single-Family Detached	210	37	DU	7	20	27	23	14	37	349
	22	SP 11-01 North Hemet Revitalization Plan	Senior Adult Housing Attached	252	96	DU	7	12	19	14	11	25	355
			Assisted Living Facility	254	137	BEDS	16	10	26	14	22	36	356
			General Office Building	710	16,340	TSF	16	3	19	3	16	19	159
			Commercial	820	118,920	TSF	69	43	112	217	236	453	4,489
			Multi-Family Residential	220	333	DU	35	118	153	117	69	186	2,438
			Internal Capture				- 14	- 19	- 33	- 37	- 35	- 72	- 780
	23	Copenhagen Village Condo/Thome	Multi-Family Residential	220	40	DU	4	14	18	14	8	22	293
	24	CUP 03-16A /TTM 33707 Devonshire Partners	Single-Family Detached	210	73	DU	14	40	54	46	26	72	689
	25	CUP 07-26 Cawston Plaza	Commercial	826	21,000	TSF	5	3	8	4	5	9	261
	26	CUP06-004 The Boardwalk	Commercial	820	74,000	TSF	160	46	206	72	184	256	2,575
	27	SDR15-004 KPC Towne Center	Commercial	820	54,000	TSF	31	20	51	99	107	206	2,039
	28	SRD14-002 Pension Del Sol	Senior Adult Housing Attached	252	120	DU	8	16	24	17	14	31	444
	29	CUP16-007 AAL Management	General Office Building	710	3,495	TSF	3	1	4	1	3	4	34
	30	Gas Station Expansions	Gas Station Convenience Store	945	6	FP	38	37	75	43	41	84	1,232
	32	CVS Pharmacy	Pharmacy		Not Specified								

Table 3 (2 of 2)
Cumulative Other Development Trip Generation

City/ County	ID	Project No./Address/Name	Land Use	Source ¹	Quantity	Units ²	AM Peak Hour			PM Peak Hour			Daily
							In	Out	Total	In	Out	Total	
City of Hemet	33	All For Show	Shopping Center	820	3,020	TSF	2	1	3	6	6	12	114
	34	Hallmark Apartments	Multi-Family Residential	220	33	DU	3	12	15	12	6	18	242
	35	CUP 08-14 Scripps West	Shopping Center	826	5,300	TSF	3	3	6	6	8	14	235
	36	Gas Station NWC Stanford/Florida	Gas / Service Station	944	6	FP	31	31	62	42	42	84	1,032
	37	TTM 36924	Single-Family Detached	210	58	DU	11	32	43	36	21	57	548
	38	TTM 36889-36890	Single-Family Detached	210	148	DU	27	83	110	92	55	147	1,397
	39	SP 05-03 Sanderson Square	Office/Industrial	770	186,700	TSF	46	29	75	36	42	78	2,323
			Commercial	820	243,000	TSF	142	86	228	444	482	926	9,173
	40	ZC 04-13 JAKS LLC	Commercial	820	170,000	TSF	99	61	160	311	337	648	6,418
	41	Paso Robles Tank	General Office Building	710	810,000	TSF	808	132	940	149	783	932	7,889
	42	SDR06-017 Los Olivos Condo/Thome	Multi-Family Residential	220	40	DU	4	14	18	14	8	22	293
	43	Hemet Metals & Alloys, LLC	General Industrial	110	29,360	TSF	18	3	21	2	16	18	146
	44	SP 07-4 Stetson Crossing	Commercial	820	189,000	TSF	110	68	178	346	374	720	7,135
	45	CUP 07-24 Hemet Medical Excellence	Medical Office	720	76,000	TSF	165	46	211	74	189	263	2,645
	46	CUP 08-07	Commercial	820	98,330	TSF	57	35	92	180	195	375	3,712
San Jacinto	50	NEC Sanderson Ave/7th Street ¹⁰	Gas Station Convenience Store	945	12	FP	76	74	150	86	82	168	2,464
			Fast Food with Drive-thru	934	5,400	TSF	111	106	217	92	84	176	2,543
			Shopping Center	820	45,700	TSF	27	16	43	84	90	174	1,725
			Trip Credits Pass-by				- 105	- 98	- 203	- 123	- 118	- 241	- 2,421
	51	TR33420A1	Single-Family Detached	210	161	DU	30	89	119	100	59	159	1,520
	52	CUP 2-08	Commercial	820	134,000	TSF	78	48	126	245	266	511	5,059
	53	TR34664	Single-Family Detached	210	35	DU	6	20	26	22	13	35	330
	54	SPDR-18-01 Baypoint Academy K-12	School	537	1053	STU	619	550	1,169	52	95	147	1,948
	55	TR22665	Single-Family Detached	210	79	DU	15	43	58	49	29	78	746
	56	SPDR 17-11	Retail/Fast Food/Gas	820	49,000	TSF	29	17	46	90	97	187	1,850
	57	SPDR 17-02 Retail Center	Grocer/Medical office	820	25,000	TSF	15	9	24	46	49	95	944
	58	SPDR 17-03 Starbucks	Coffee Shop with Drive-thru	937	2,000	TSF	91	87	178	43	44	87	1,641
	59	SPDR 17-04 Wiener schnitzel	Fast Food with Drive-thru	934	1,250	TSF	26	24	50	21	20	41	589
	60	TR30481	Single-Family Detached	210	34	DU	6	19	25	21	13	34	321
	61	TR33716	Single-Family Detached	210	49	DU	9	27	36	31	18	49	463
	62	TR32352	Single-Family Detached	210	47	DU	9	26	35	29	18	47	444
	63	TR31097	Single-Family Detached	210	214	DU	40	118	158	133	79	212	2,020
	64	TR32809	Multi-Family Residential	220	272	DU	29	96	125	96	56	152	1,991
	65	VTR31384	Single-Family Detached	210	47	DU	9	26	35	29	18	47	444
	66	TR32153	Single-Family Detached	210	44	DU	8	25	33	27	17	44	415
	67	SPDR 16-05 San Jacinto Valley Academy K-12	School	537	1,350	STU	794	705	1,499	66	123	189	2,498
TOTAL							6,246	5,435	11,681	6,745	7,377	14,122	158,034

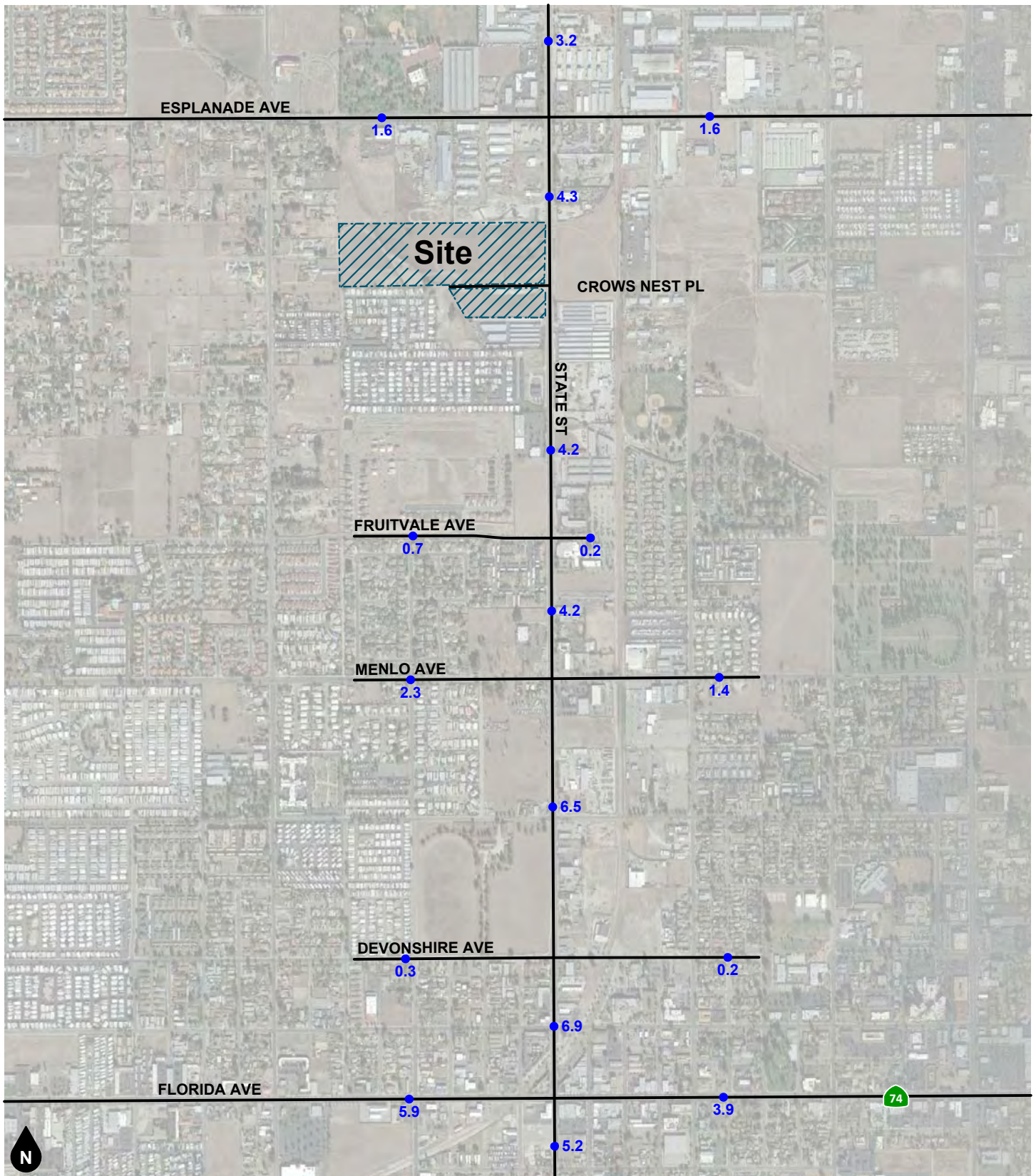
Notes:

- (1) Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Code ###, unless otherwise noted. MU = Multi-use
 - [a] Pass-by rates obtained from ITE Trip Generation Handbook (3rd Edition, 2017).
 - [b] Internal capture rates calculated in accordance with procedures in the ITE Trip Generation Handbook (3rd Edition, 2017). The daily internal capture is equal to the sum of the AM and PM internal capture values; this provides a conservative estimate since internal capture would also occur during non-peak hours.
- (2) TSF = Thousand Square Feet; STU = Students; DU = Dwelling Units; AC = Acres.
- (3) Daily trips based on the average of other recreational uses Daily/PM ratio where the daily rates are generally (8 to 10 times) the PM rate.
- (4) Daily trips based on the average of other school uses Daily/AM ratio where the daily rates are generally (2.8 to 3.0 times) the AM rate.
- (5) City of Hemet Website. Planning Environmental Documents.
- (6) Source: TTM 36891-36892 Traffic Impact Analysis, TJW Engineering., dated June 6, 2017
- (7) Source: McHolland Retail Traffic Impact Analysis, Trames Solutions, Inc., dated
- (8) Source: Downtown Hemet Specific Plan Traffic Impact Analysis, Kunzman & Associates, Inc., dated December 9, 2016
- (9) Source: Zanderson Plaza Traffic Impact Analysis, Kunzman & Associates, Inc., dated June 20, 2017
- (10) Source: NEC Sanderson Ave/7th St Traffic Impact Analysis, TJW Engineering, May 2018



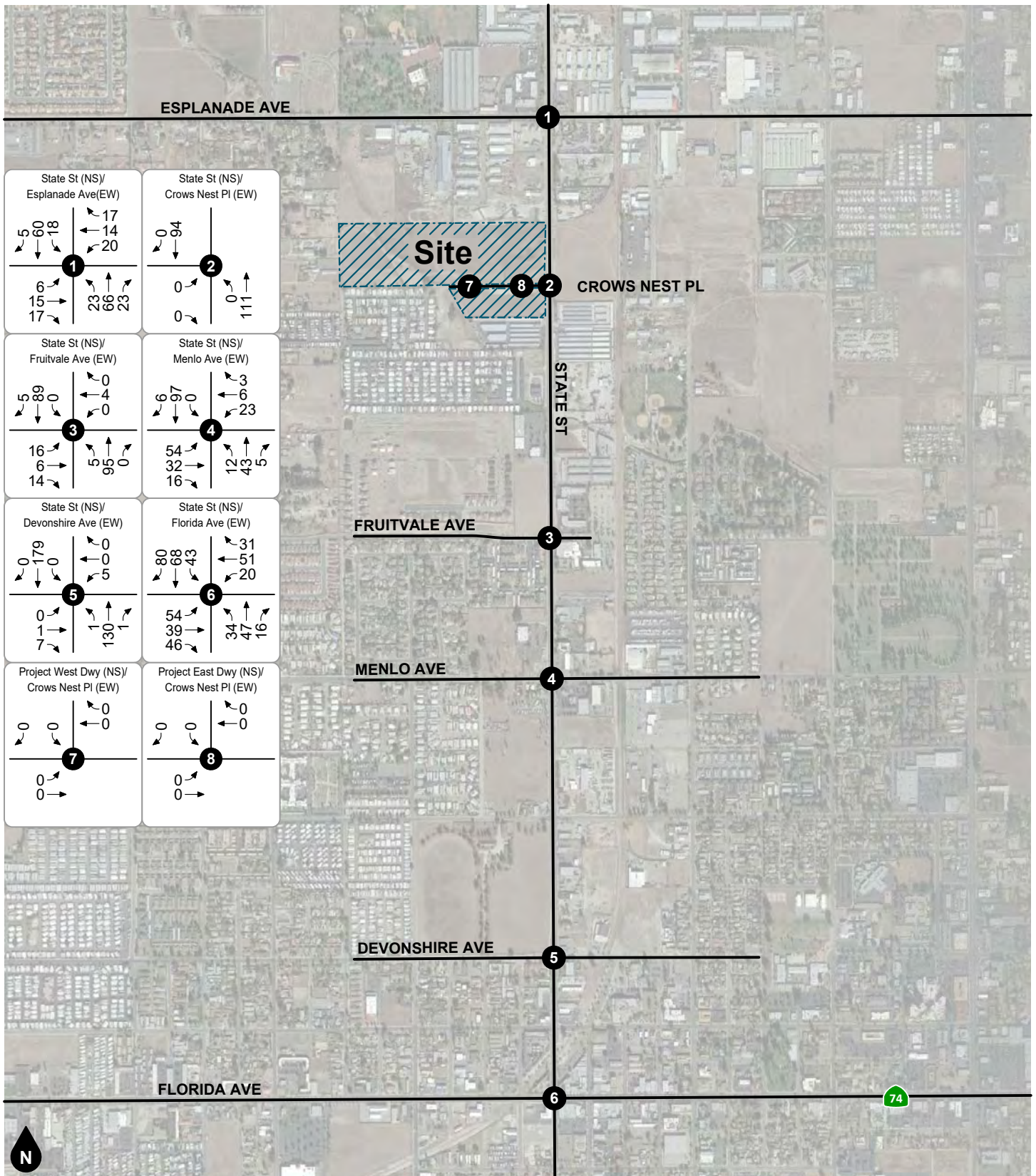
Legend
 # Traffic Analysis Zone

Figure 18
Other Development Location Map



Legend
 ●## Vehicles Per Day (1,000's)

Figure 19
Other Development Average Daily Traffic Volumes



Legend
 # Study Intersection

Figure 20
Other Development
AM Peak Hour Intersection Turning Movement Volumes

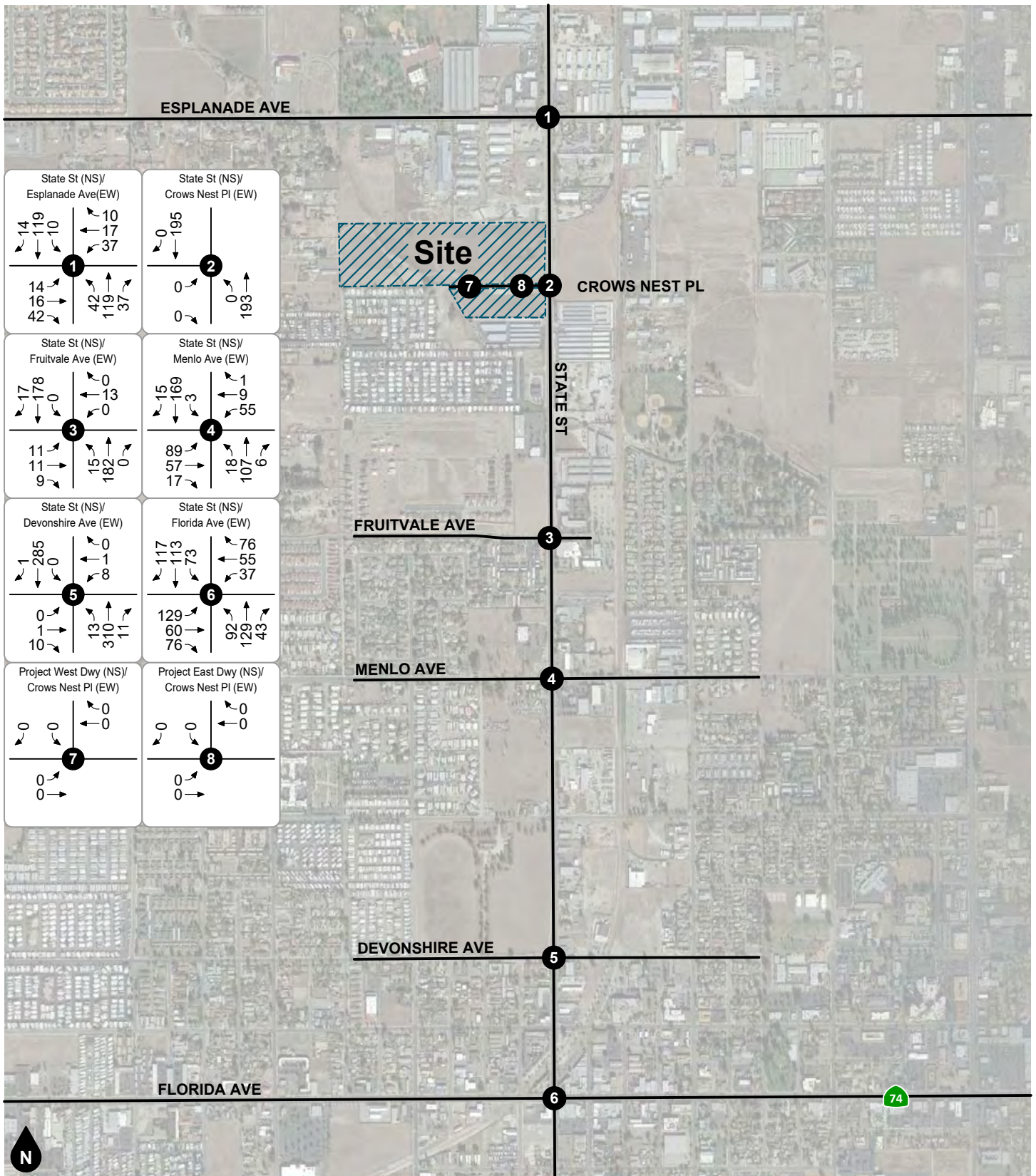
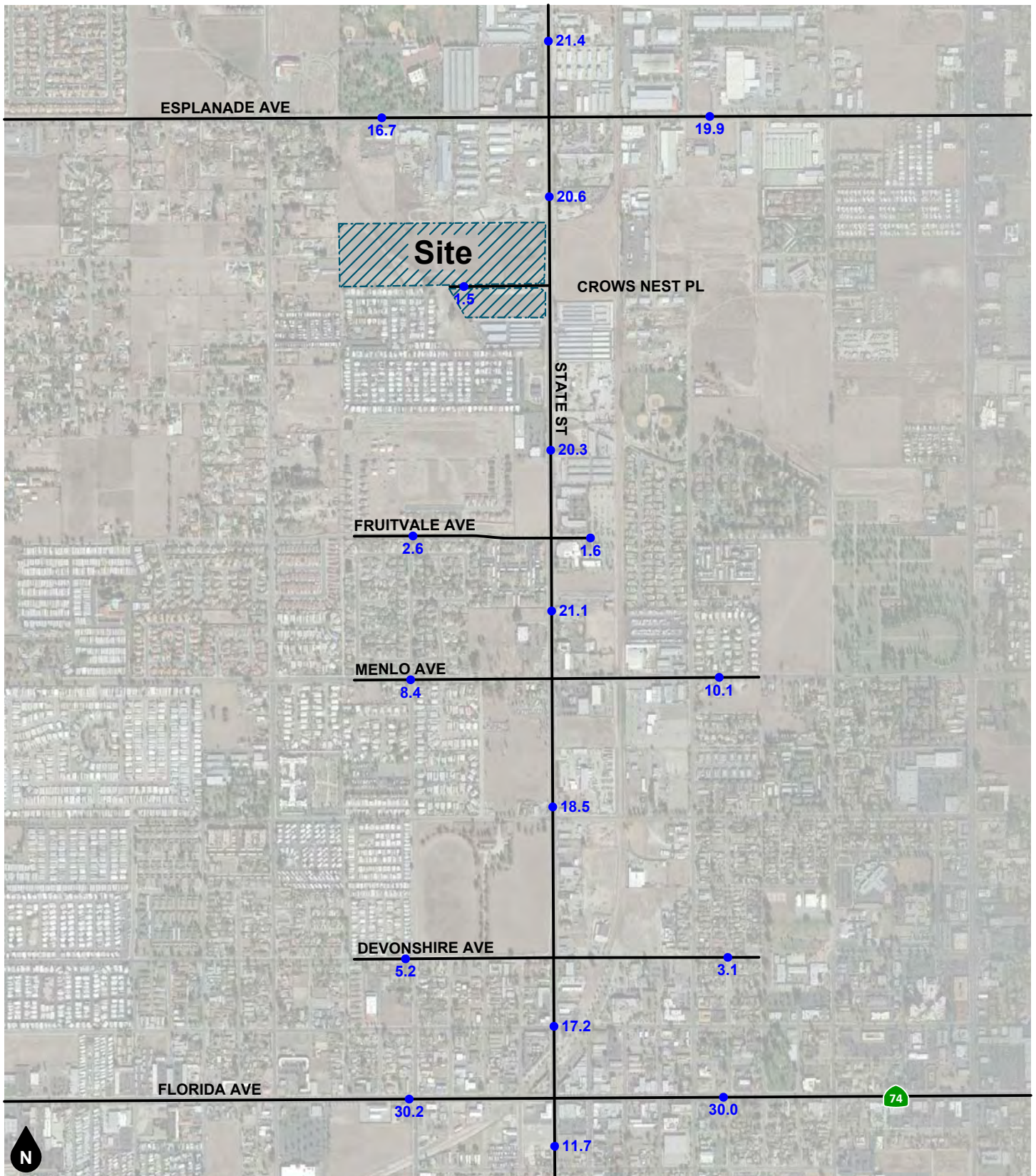


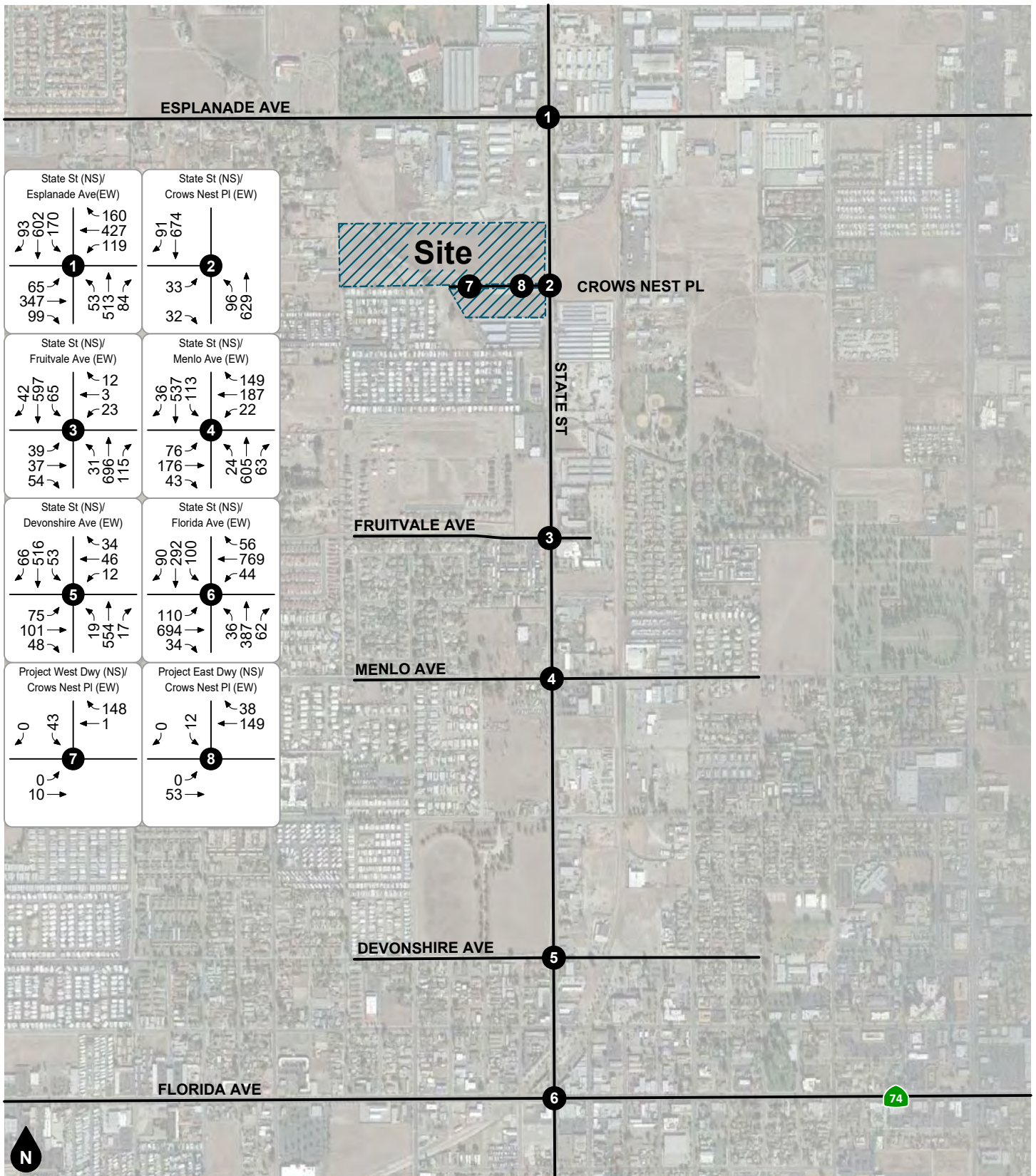
Figure 21
Other Development
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

Figure 22
Existing Plus Project Average Daily Traffic Volumes



Legend
 # Study Intersection

Figure 23
Existing Plus Project
AM Peak Hour Intersection Turning Movement Volumes

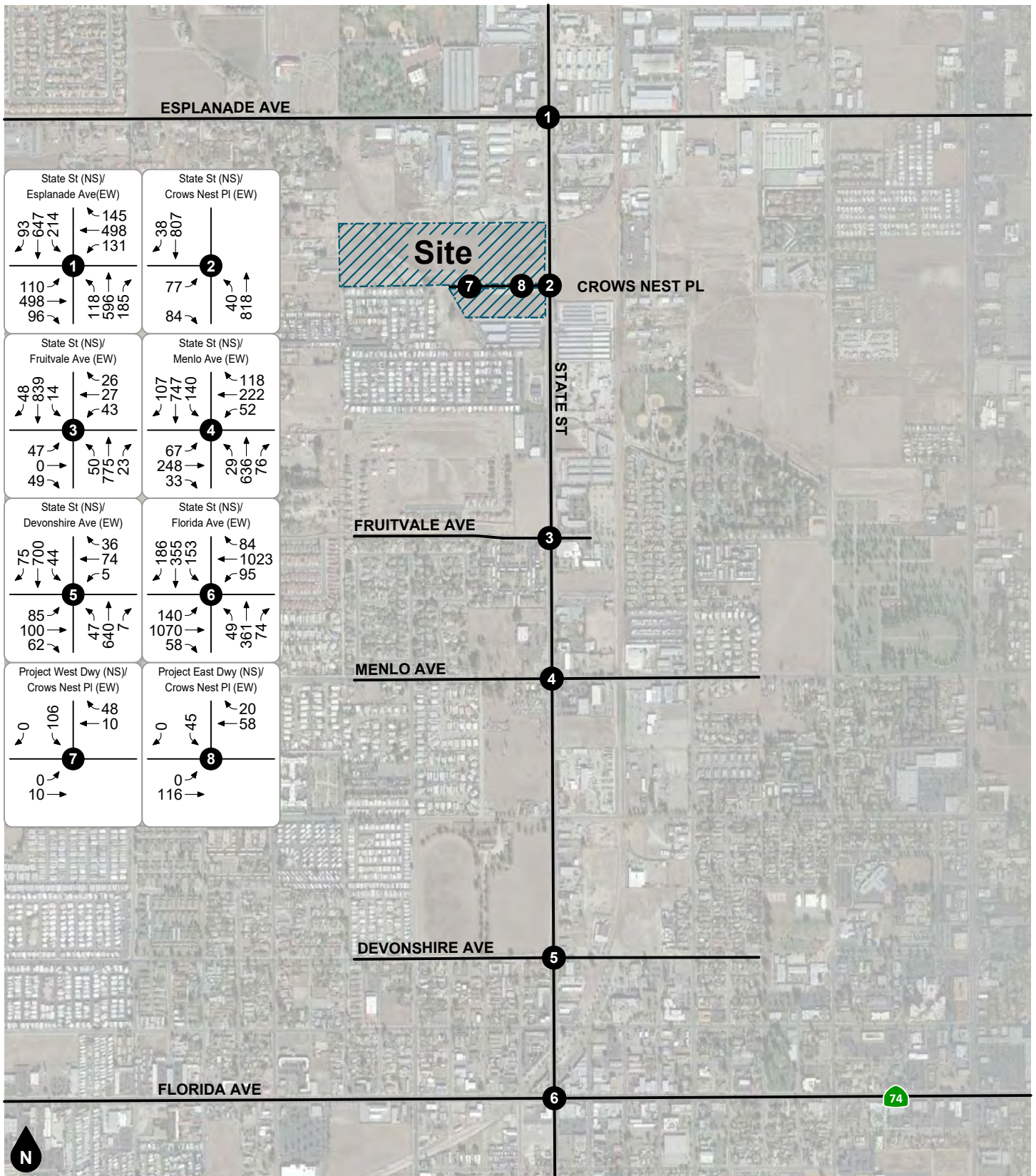
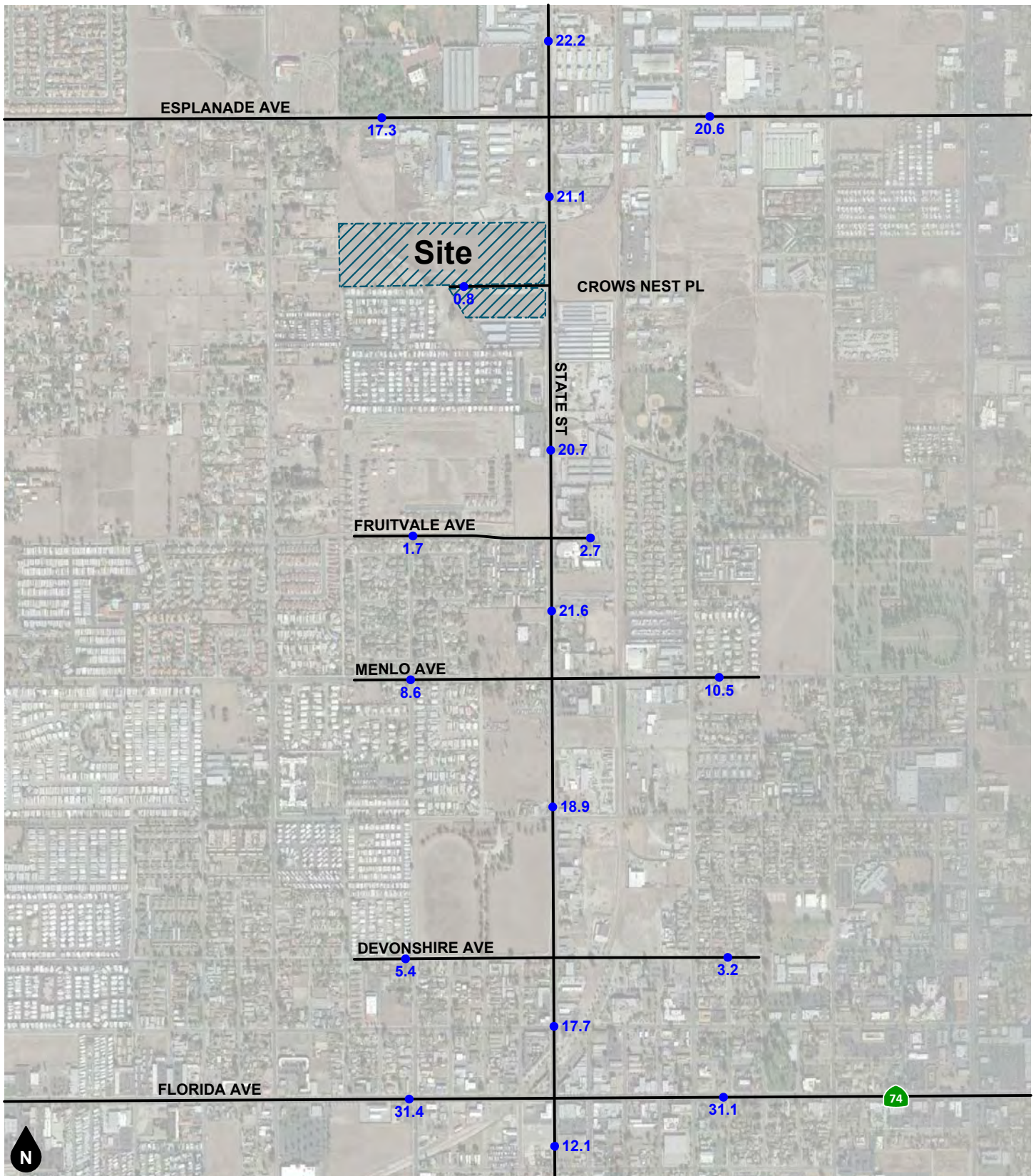


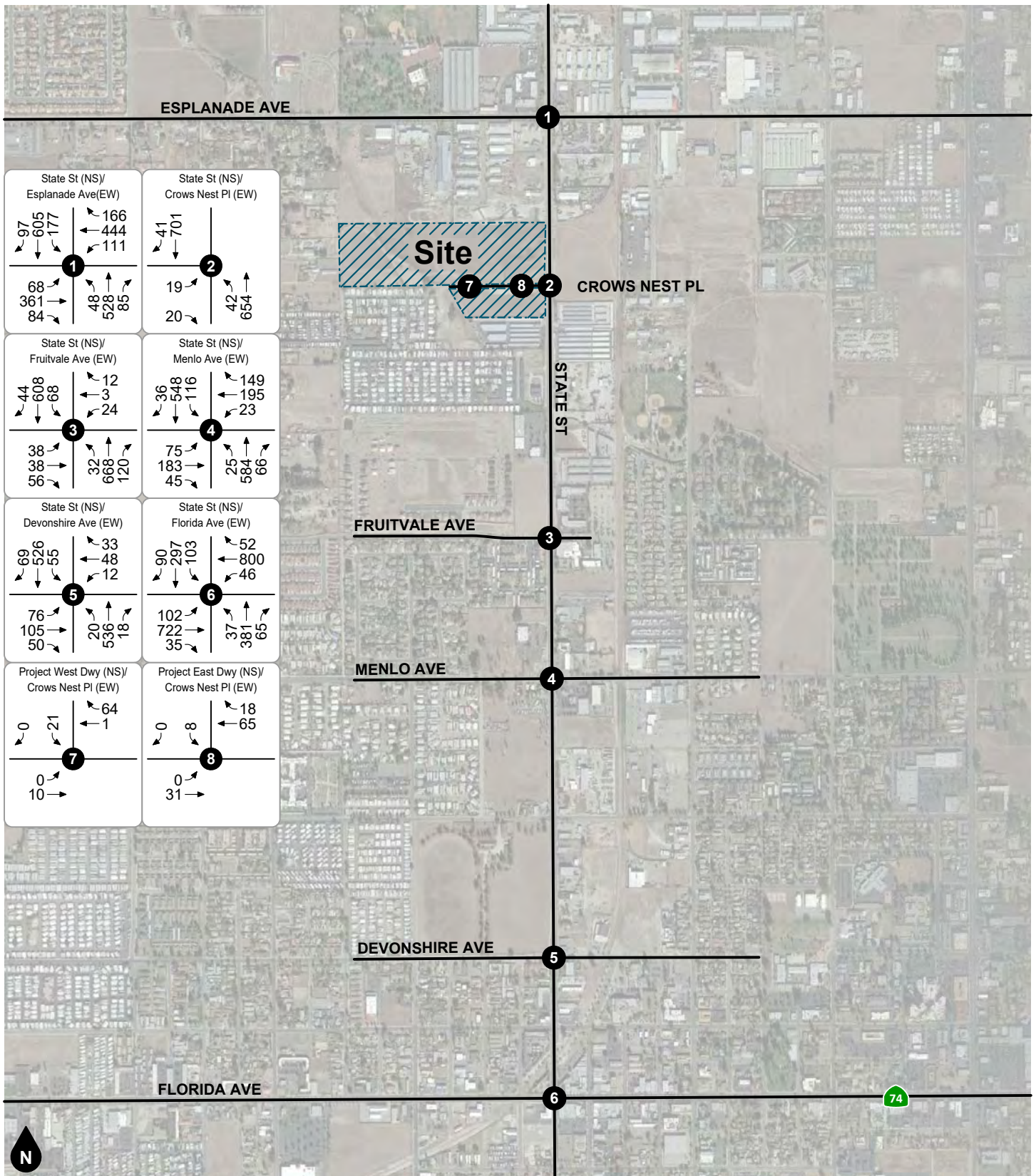
Figure 24
Existing Plus Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

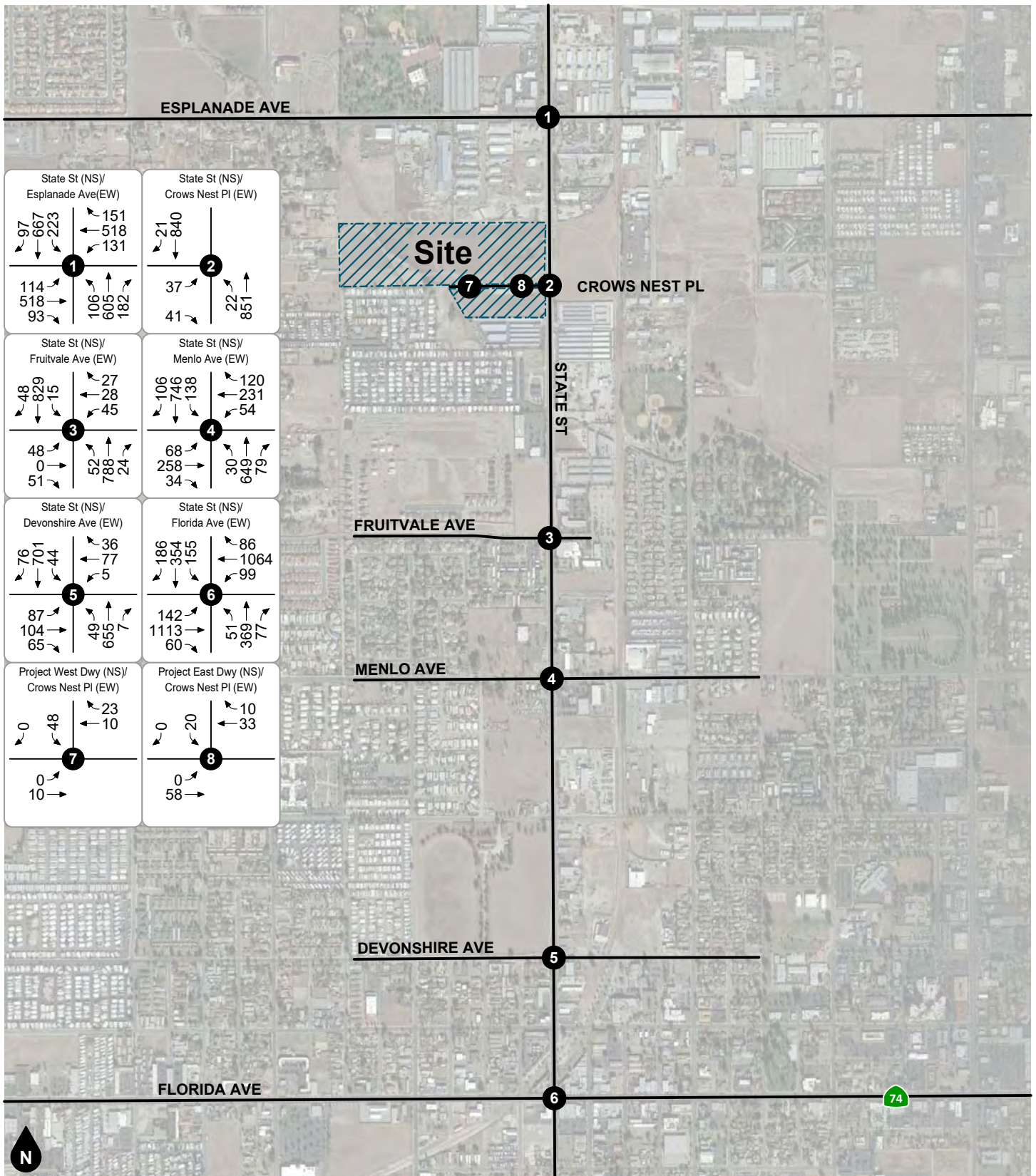
●## Vehicles Per Day (1,000's)

Figure 25
Opening Year (2021) Plus Project (EAGP)
Average Daily Traffic Volumes



Legend
 # Study Intersection

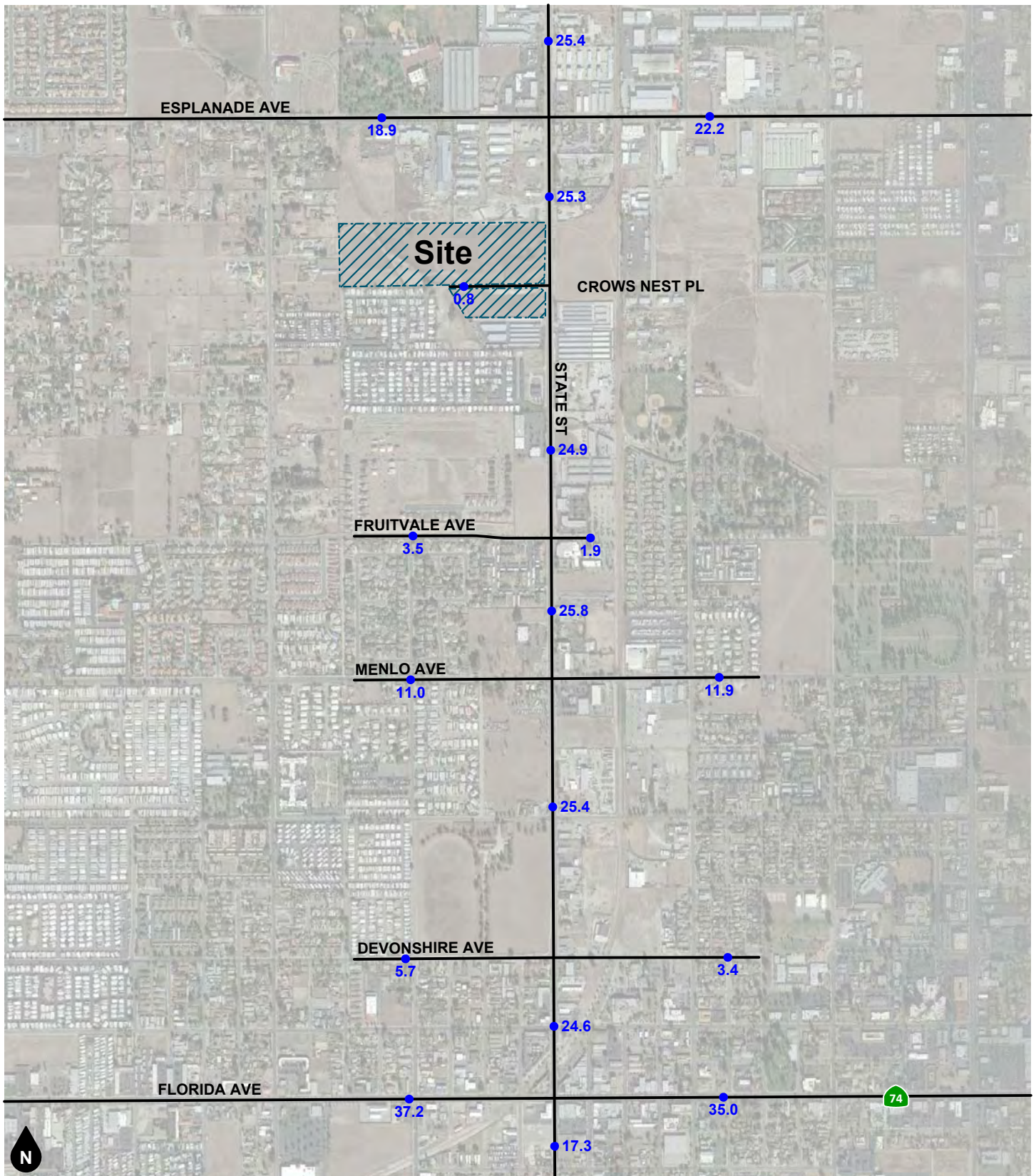
Figure 26
Opening Year (2021) Plus Project (EAGP)
AM Peak Hour Intersection Turning Movement Volumes



Legend

Study Intersection

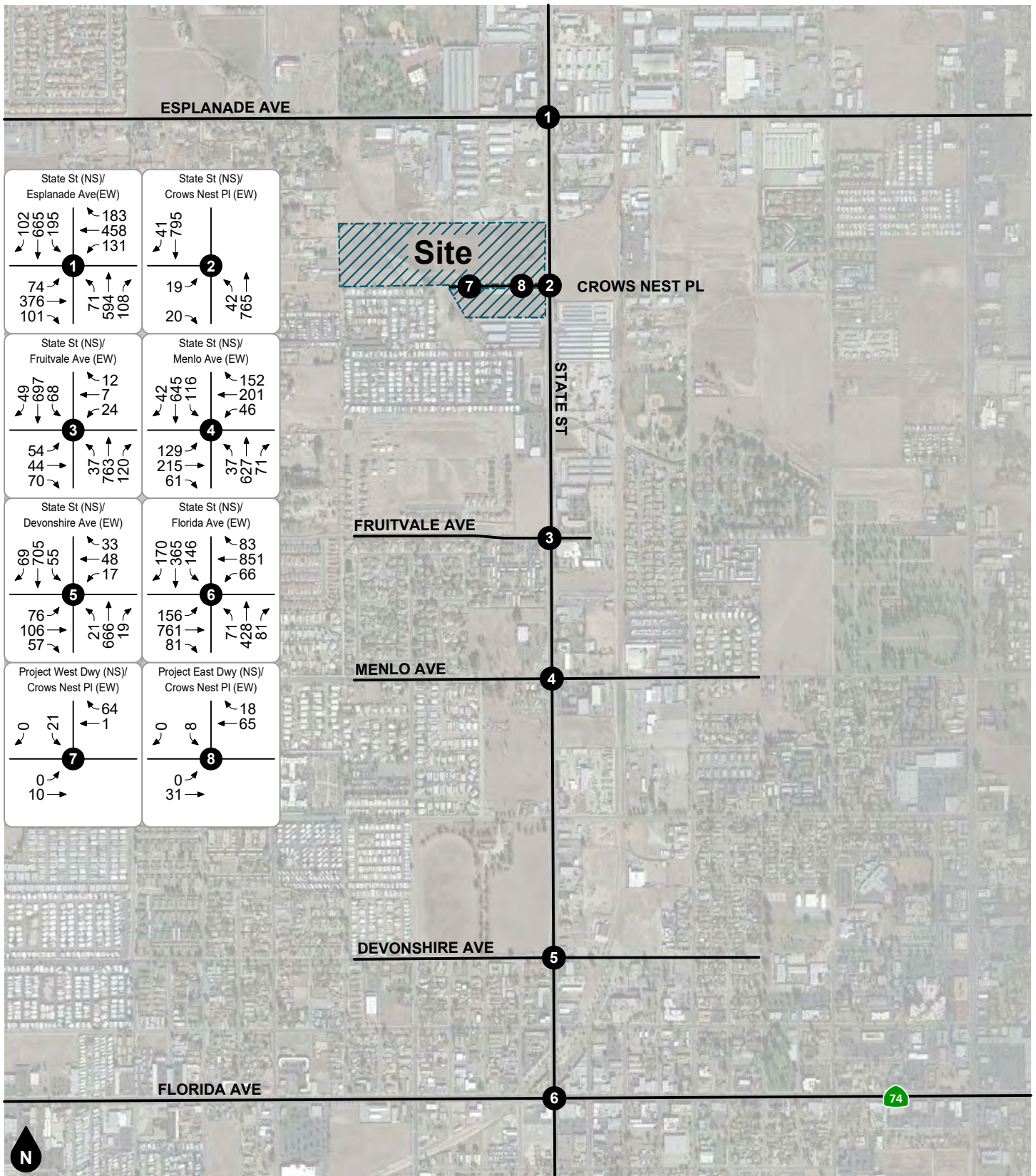
Figure 27
Opening Year (2021) Plus Project (EAGP)
PM Peak Hour Intersection Turning Movement Volumes



Legend

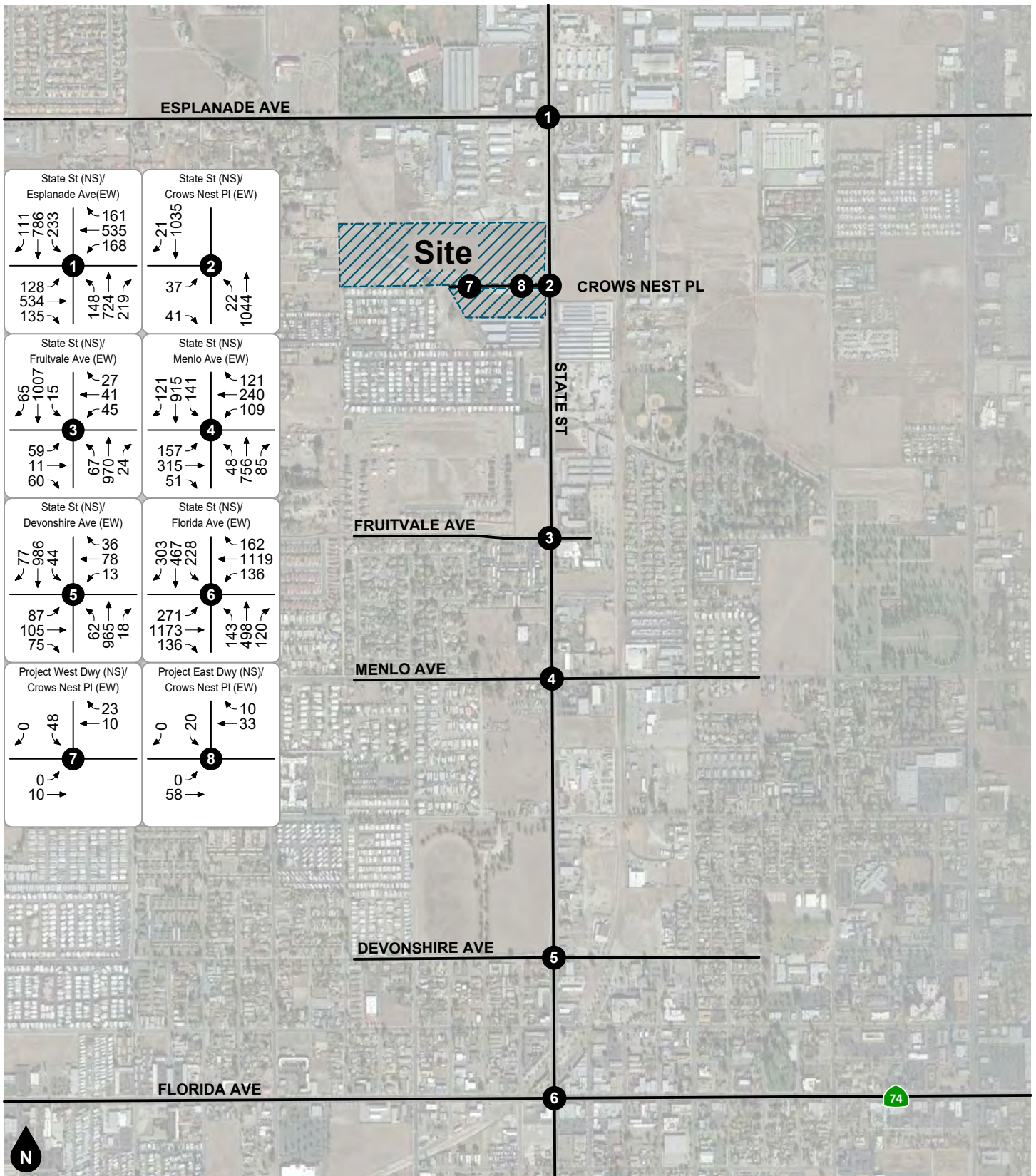
●## Vehicles Per Day (1,000's)

Figure 28
Opening Year (2021) Plus Project Plus Cumulative (EAGPC)
Average Daily Traffic Volumes



Legend
 # Study Intersection

Figure 29
 Opening Year (2021) Plus Project Plus Cumulative (EAGPC)
 AM Peak Hour Intersection Turning Movement Volumes



Legend

Study Intersection

Figure 30
Opening Year (2021) Plus Project Plus Cumulative (EAGPC)
PM Peak Hour Intersection Turning Movement Volumes

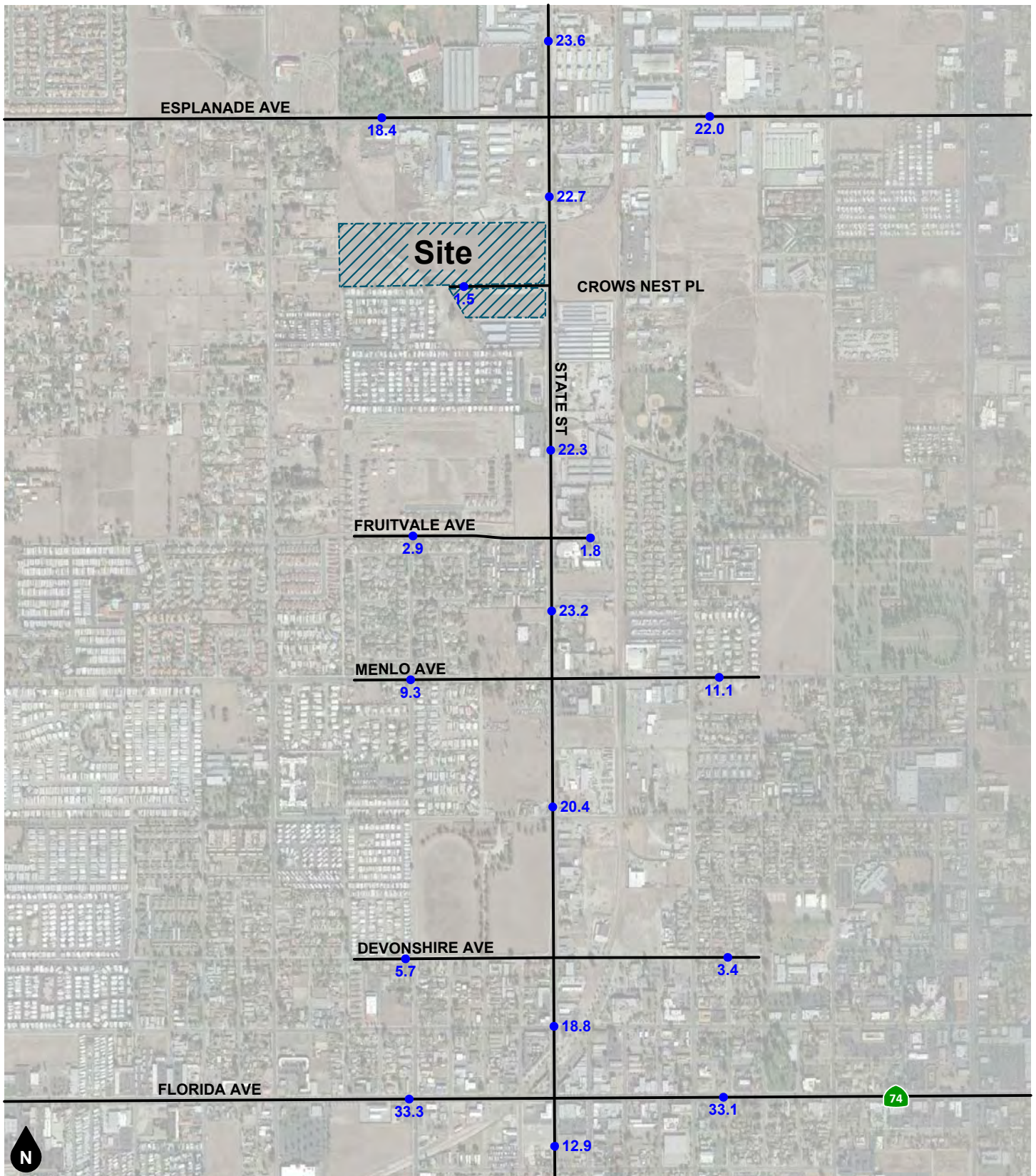
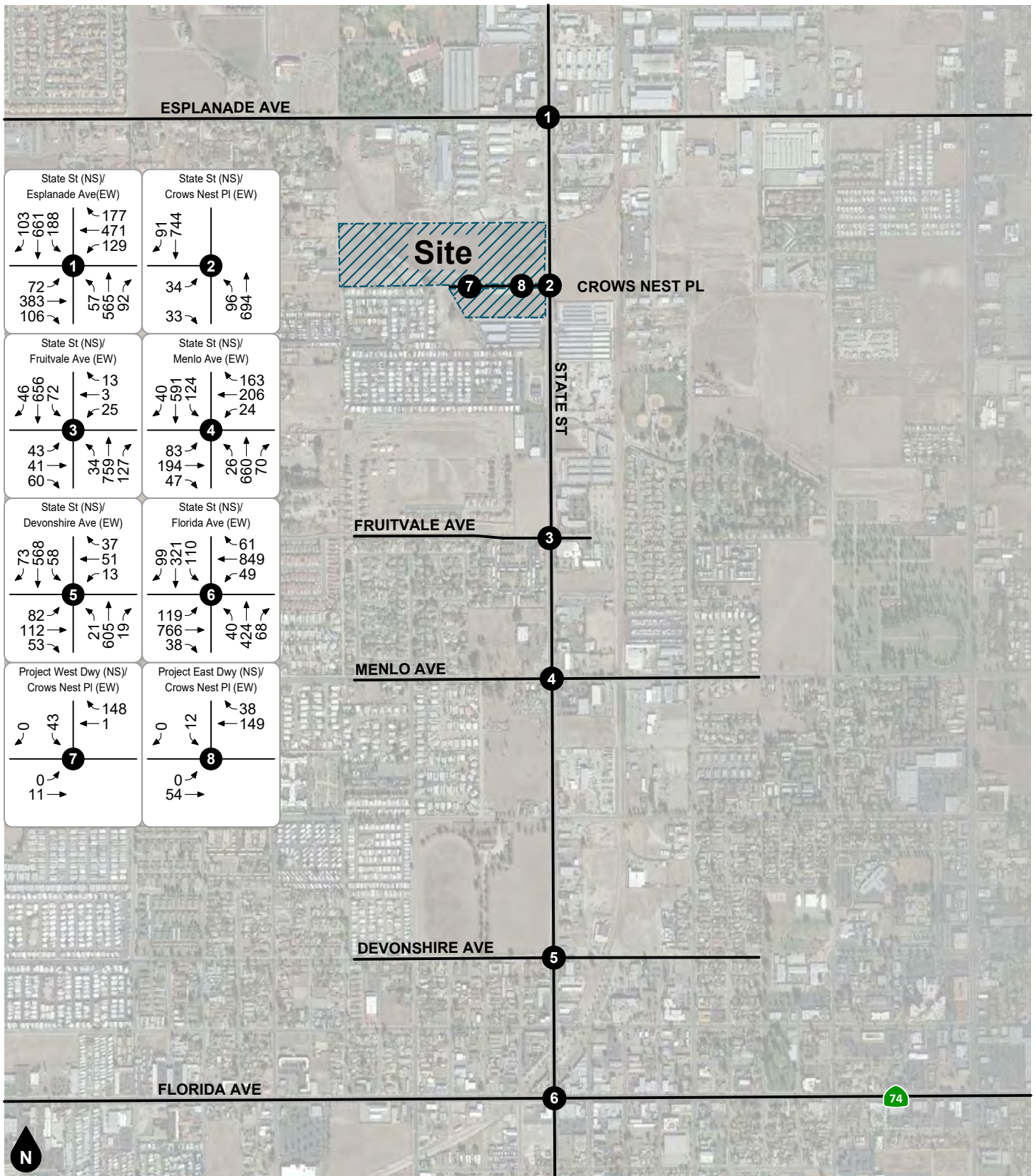


Figure 31
Completion Year (2024) Plus Project (EAGP)
Average Daily Traffic Volumes



Legend
 # Study Intersection

Figure 32
 Completion Year (2024) Plus Project (EAGP)
 AM Peak Hour Intersection Turning Movement Volumes

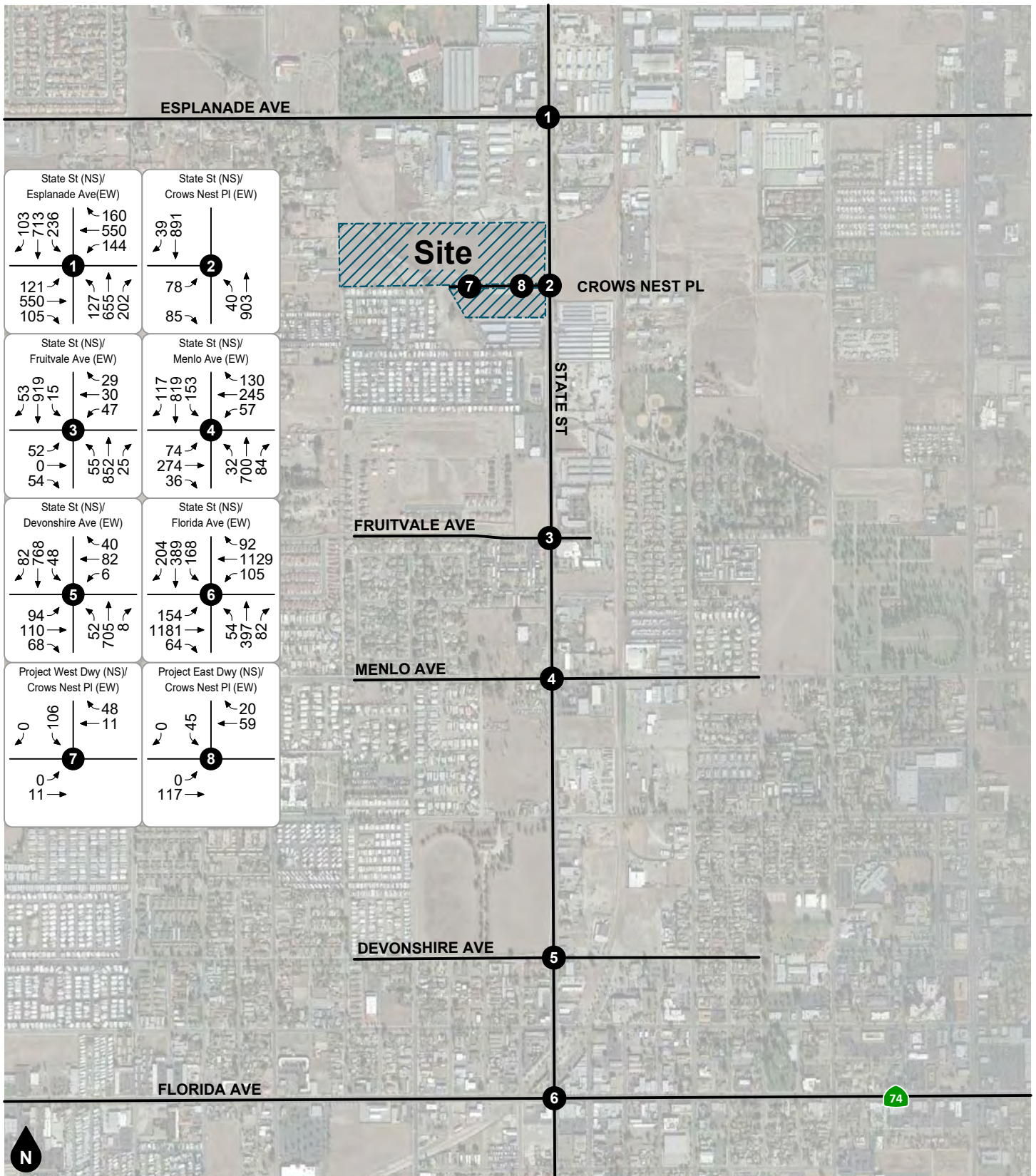
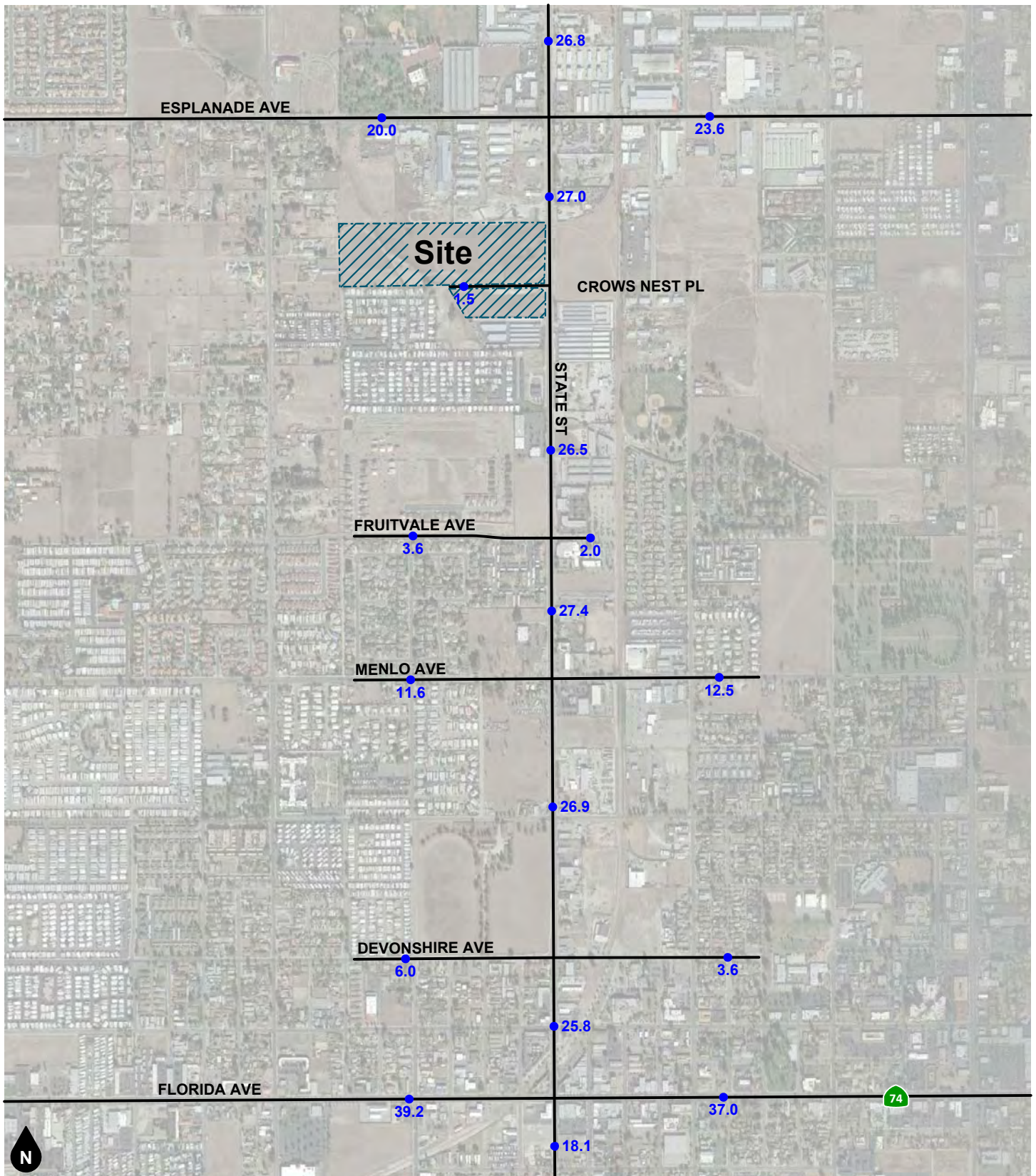


Figure 33
Completion Year (2024) Plus Project (EAGP)
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

Figure 34
Completion Year (2024) Plus Project Plus Cumulative (EAGPC)
Average Daily Traffic Volumes

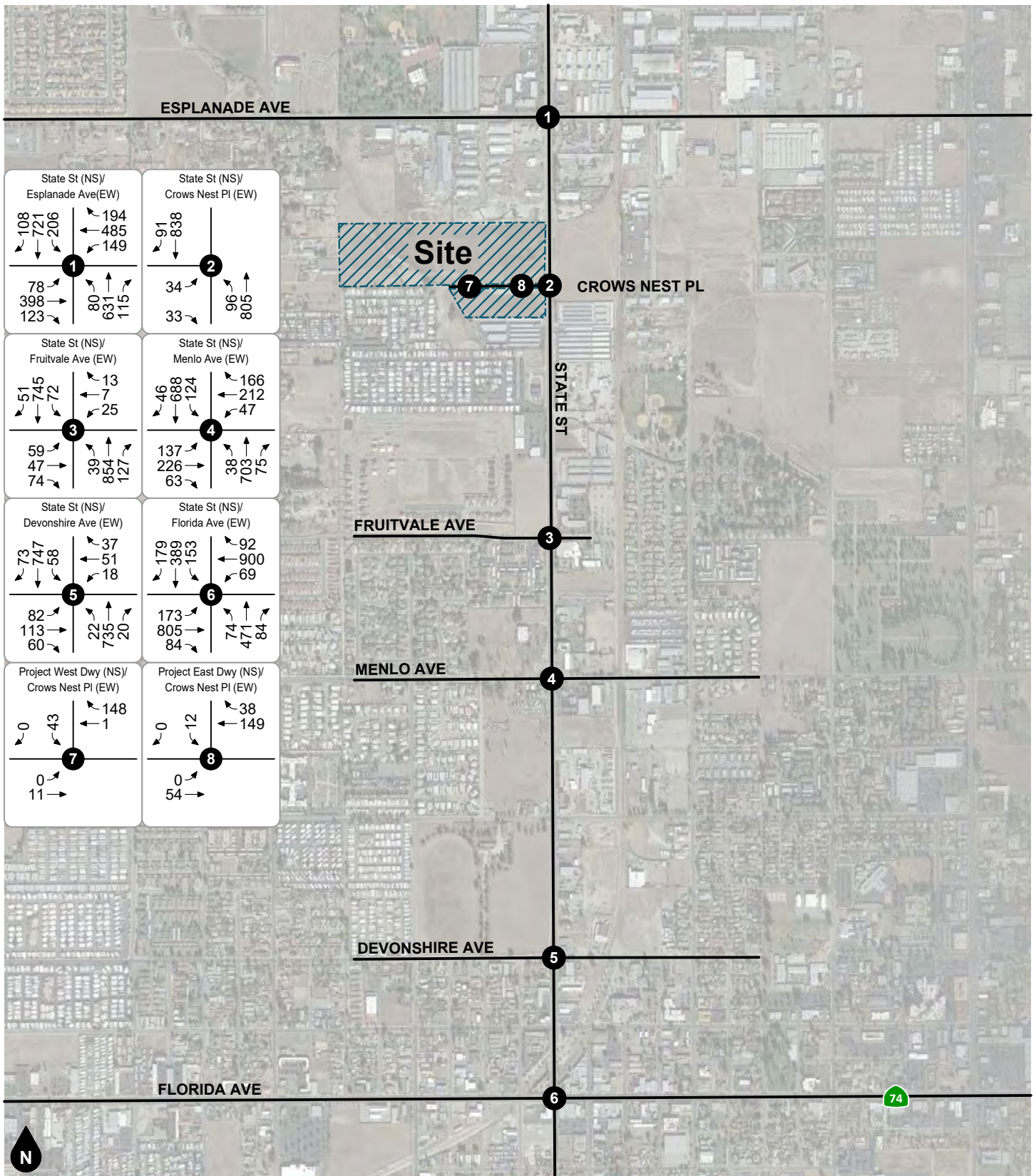
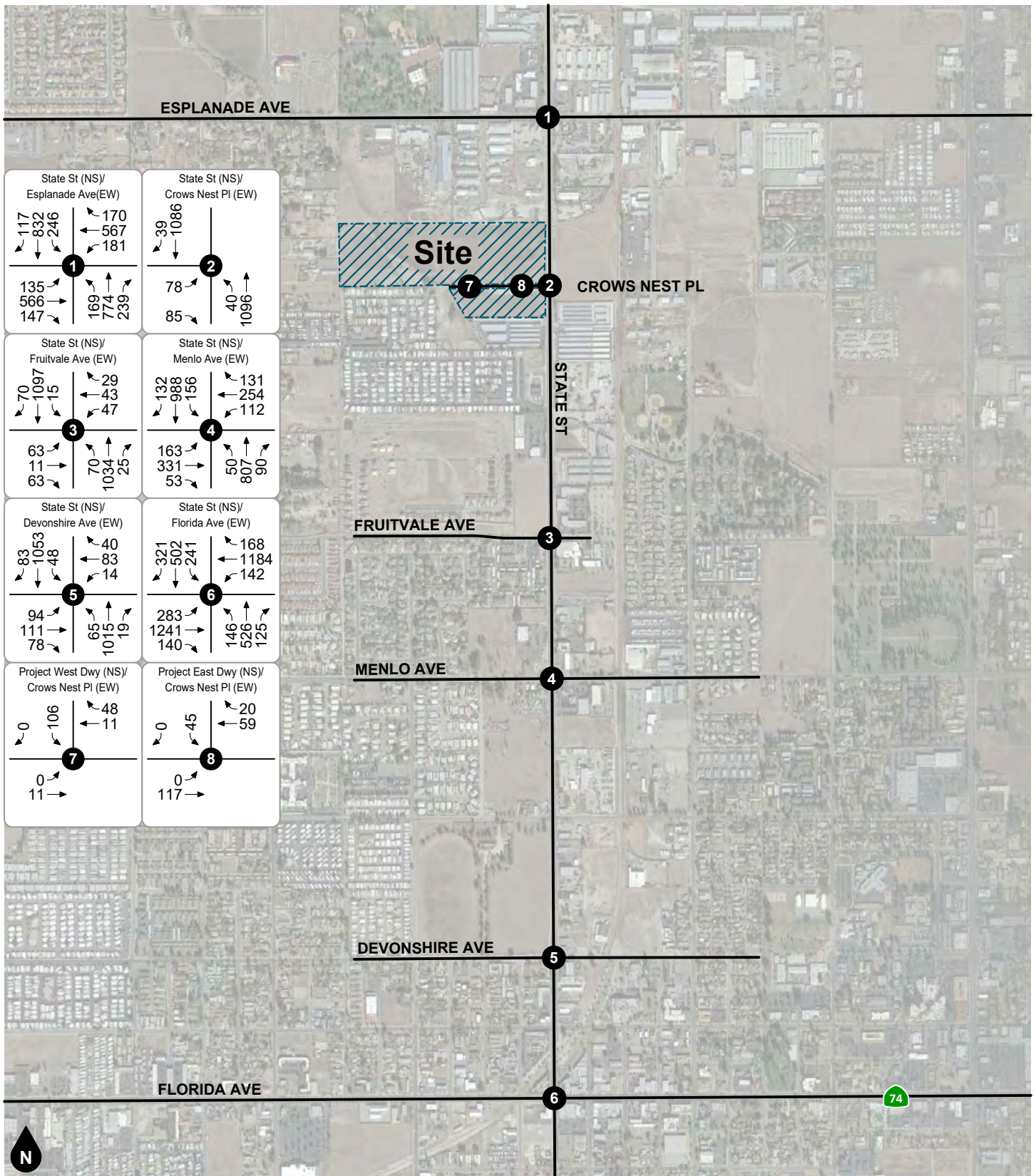


Figure 35
Completion Year (2024) Plus Project Plus Cumulative (EAGPC)
AM Peak Hour Intersection Turning Movement Volumes



Legend

Study Intersection

Figure 36
Completion Year (2024) Plus Project Plus Cumulative (EAGPC)
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE OPERATIONAL ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix D.

EXISTING PLUS PROJECT

The study intersection Levels of Service for Existing Plus Project conditions are shown in Table 4. The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Existing Plus Project conditions, except for the following study intersection that is projected to operate at unacceptable Level of Service without improvements (see Table 4):

- State Street (NS) at Crows Nest Place (EW) - #2

The following improvement is required with project development to maintain an acceptable Level of Service at the study intersection:

- State Street (NS) at Crows Nest Place (EW) - #2
 - Install Traffic Signal

OPENING YEAR (2021) PLUS PROJECT (EAGP)

The study intersection Levels of Service for Opening Year (2021) Plus Project (EAGP) conditions are shown in Table 5. The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2021) Plus Project (EAGP) conditions, (see Table 5).

OPENING YEAR (2021) PLUS PROJECT PLUS CUMULATIVE (EAGPC)

The study intersection Levels of Service for Opening Year (2021) Plus Project Plus Cumulative (EAGPC) conditions are also shown in Table 5. The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2021) Plus Project Plus Cumulative (EAGPC) conditions, except for the following study intersections that are projected to operate at unacceptable Levels of Service without improvements (see Table 5):

- State Street (NS) at Crows Nest Place (EW) - #2
- State Street (NS) at Menlo Avenue (EW) - #4

In addition to the improvements previously identified for Opening Year (2021) With Project conditions, the following additional improvements are required with cumulative development to maintain acceptable Levels of Service at the study intersections:

- State Street (NS) at Menlo Avenue (EW) - #4
 - Reconfigure eastbound approach striping to include one left turn lane and one shared through/right lane.
 - Reconfigure westbound approach striping to include one left turn lane, one through lane, and one right turn lane.
 - Modify traffic signal phasing to provide permissive eastbound and westbound phasing.

COMPLETION YEAR (2024) PLUS PROJECT (EAGP)

The study intersection Levels of Service for Completion Year (2024) Plus Project (EAGP) conditions are shown in Table 6. The study intersections are forecast to operate within acceptable Levels of Service (D or better)

during the peak hours for Completion Year (2024) Plus Project (EAGP) conditions, except for the following study intersection that is projected to operate at unacceptable Level of Service without improvements (see Table 6):

- State Street (NS) at Crows Nest Place (EW) - #2

The previously identified improvements for Opening Year (2021) Plus Project (EAGP) conditions would also maintain acceptable Levels of Service at the study intersections for Completion Year (2024) Plus Project (EAGP) conditions. No additional improvements are required for Completion Year (2024) Plus Project (EAGP) conditions.

COMPLETION YEAR (2024) PLUS PROJECT PLUS CUMULATIVE (EAGPC)

The study intersection Levels of Service for Completion Year (2024) Plus Project Plus Cumulative (EAGPC) conditions are also shown in Table 6. The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Completion Year (2024) Plus Project Plus Cumulative (EAGPC) conditions, except for the following study intersections that are projected to operate at unacceptable Levels of Service without improvements (see Table 6):

- State Street (NS) at Crows Nest Place (EW) - #2
- State Street (NS) at Menlo Avenue (EW) - #4

The previously identified improvements for Opening Year (2021) Plus Project Plus Cumulative (EAGPC) conditions would also maintain acceptable Levels of Service at the study intersections for Completion Year (2024) Plus Project Plus Cumulative (EAGPC) conditions. No additional improvements are required for Completion Year (2024) Plus Project Plus Cumulative (EAGPC) conditions.

To provide a conservative analysis for State Street and Florida Avenue (SR-74), this cumulative development analysis does not include re-routing of eastbound-westbound Florida Avenue traffic volumes with the proposed future realignment of SR-79 to the west of State Street, which is likely to alleviate congestion at this intersection.

TRAFFIC SIGNAL WARRANT ANALYSIS

The potential need for installation of a traffic signal at unsignalized study intersections was evaluated based on the California Manual on Uniform Traffic Control Devices ("California MUTCD", November 2014), Section 4C-101, peak hour volume warrant (Warrant 3). The unsignalized study intersections are not forecast to satisfy the California MUTCD peak hour volume warrant (Warrant 3), except for the following intersection under Existing Plus Project conditions:

- State Street (NS) at Crows Nest Place (EW) - #2

Traffic signal warrant worksheets are provided in Appendix E.

CONSTRUCTION TRAFFIC CONTROL MEASURES

A construction work site traffic control plan shall be submitted to the City for review and approval prior to the start of any construction work. The plans shall show the location of any roadway, sidewalk, bike route, bus stop or driveway closures, traffic detours, haul routes, hours of operation, protective devices, warning signs and access to abutting properties. Temporary traffic controls used around the construction area should adhere to the standards set forth in the California Manual of Uniform Traffic Control Devices (2014) and construction activities should adhere to applicable local ordinances.

Site development would require the use of haul trucks during site clearing and excavation and the use of a variety of other construction vehicles throughout the construction work at the site. Transportation of heavy construction equipment and or materials, which requires the use of oversized vehicles, will require the appropriate transportation permit.

Table 4
Existing Plus Project Intersection Levels of Service

ID	Study Intersection	Traffic Control ¹	Existing				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay ²	LOS ³	Delay ²	LOS ³	Delay ²	LOS ³
1.	State Street at Esplanade Avenue	TS	21.4	C	27.1	C	24.3	C	28.0	C
2.	State Street at Crows Nest	CSS	17.5	C	21.2	C	36.5	E	82.9	F
	With Improvements	TS	-		-		8.2	A	15.0	B
3.	State Street at Fruitvale Avenue	TS	12.1	B	11.0	B	12.2	B	11.2	B
4.	State Street at Menlo Avenue	TS	31.8	C	41.1	D	36.9	D	42.5	D
5.	State Street at Devonshire Avenue	TS	16.1	B	16.5	B	16.5	B	16.5	B
6.	State Street at Florida Avenue	TS	22.4	C	29.2	C	26.0	C	31.4	C
7.	Project West Access at Crows Nest	CSS	-		-		10.0	A	9.8	A
8.	Project East Access at Crows Nest	CSS	-		-		9.9	A	9.8	A

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop
- (2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

Table 5
Opening Year (2021) Intersection Levels of Service

ID	Study Intersection	Traffic Control ¹	Existing Plus Ambient Growth (2021) With Project (EAGP)				Existing Plus Ambient Growth (2021) With Cumulative With Project (EAGCP)			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay ²	LOS ³	Delay ²	LOS ³	Delay ²	LOS ³
1.	State Street at Esplanade Avenue	TS	24.4	C	28.4	C	25.2	C	33.7	C
2.	State Street at Crows Nest	CSS	23.8	C	34.2	D	30.1	D	70.1	F
	With Improvements	TS					5.4	A	19.8	B
3.	State Street at Fruitvale Avenue	TS	12.4	B	11.5	B	13.9	B	13.8	B
4.	State Street at Menlo Avenue	TS	37.7	D	42.9	D	49.2	D	81.5	F
	With Improvements	TS	-		-		20.6	C	27.2	C
5.	State Street at Devonshire Avenue	TS	16.7	B	16.7	B	17.0	B	17.4	B
6.	State Street at Florida Avenue	TS	26.1	C	32.2	C	28.9	C	49.8	D
7.	Project West Access at Crows Nest	CSS	9.4	A	9.4	A	9.4	A	9.4	A
8.	Project East Access at Crows Nest	CSS	9.1	A	9.1	A	9.1	A	9.1	A

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop.
- (2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

Table 6
Completion Year (2024) Intersection Levels of Service

ID	Study Intersection	Traffic Control ¹	Existing Plus Ambient Growth (2024) With Project (EAGP)				Existing Plus Ambient Growth (2024) With Cumulative With Project (EAGCP)			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay ²	LOS ³	Delay	LOS	Delay	LOS
1.	State Street at Esplanade Avenue	TS	25.0	C	30.7	C	26.1	C	39.0	D
2.	State Street at Crows Nest	TS	8.3	A	18.6	B	8.4	A	21.5	C
3.	State Street at Fruitvale Avenue	TS	13.1	B	12.3	B	14.8	B	15.0	B
4.	State Street at Menlo Avenue	TS	40.3	D	51.3	D	54.3	D	106.5	F
	With Improvements	TS					21.7	C	30.0	C
5.	State Street at Devonshire Avenue	TS	17.1	B	17.1	B	17.5	B	17.9	B
6.	State Street at Florida Avenue	TS	27.1	C	33.9	C	31.0	C	53.6	D
7.	Project West Access at Crows Nest	CSS	10.0	A	9.8	A	10.0	A	9.8	A
8.	Project East Access at Crows Nest	CSS	9.9	A	9.9	A	9.9	A	9.9	A

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop.
- (2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

7. SITE ACCESS

Two full access driveways are proposed on Crows Nest Place. Trucks to and from the site will primarily use the west access driveway.

PROJECT DESIGN FEATURES

This analysis assumes the following improvements will be constructed by the project to provide project site access:

Project West Driveway at Crows Nest Place - #7

- Install outbound cross street stop-control.
- Construct the southbound approach to consist of one shared left-turn/right-turn lane.

Project East Driveway at Crows Nest Place - #8

- Install outbound cross street stop-control.
- Construct the southbound approach to consist of one shared left-turn/right-turn lane.

This analysis also assumes this project shall comply with the following conditions as part of the City of Hemet standard development review process:

- A construction work (temporary) traffic control plans are required by State law in accordance with the standards set forth in the California Manual of Uniform Traffic Control Devices (2014), and shall be submitted to the City of Hemet prior to the issuance of a grading permit or the start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closure and/or detour as well as haul routes and hours of operation. Whenever possible, construction related truck trips should be restricted to off-peak hours, to the extent that conditions permit.
- All roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project should be constructed in accordance with applicable State/ Federal engineering standards and to the satisfaction of the City of Hemet Public Works Department.
- Site-adjacent roadways should be constructed and/or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Hemet Public Works Department.
- Adequate off-street parking should be provided to the satisfaction of City of Hemet Planning Department based on supporting parking and density analysis prepared for the project.
- The final grading, landscaping, and street improvement plans should demonstrate that sight distance standards are met in accordance with applicable City of Hemet/California Department of Transportation sight distance standards.

SITE ACCESS QUEUEING

Table 7 summarizes the results of a queue analysis for left turn, right turn, or shared through/turn lanes at project driveways based on the forecast 95th-percentile queue lengths² shown in the delay calculation worksheets (see Appendix D). Additionally, the recommended storage length is provided for turn lanes that are forecast to exceed the existing storage.

² For a more conservative analysis, the forecast 95th-percentile queue lengths shown in the delay calculation worksheets have been rounded up to nearest 5-foot increment.

Based on the queueing analysis, adequate storage length is forecast to be provided for the shared-turn lanes at the project driveways.

Table 7
Project Driveway Queueing Analysis

ID	Intersection	Approach	Lane	Storage Length (Feet) ¹	Peak Hour 95th-Percentile Queue Length (Feet) ²				Adequate Storage Provided
					Opening Year (2021) With Project (EAGPC)		Opening Year (2024) With Project (EAGPC)		
					AM Peak Hour	PM Peak Hour	AM	PM	
2.	State Street at Crows Nest	Northbound	Left	150	30	<25	70	30	YES
		Southbound	Thru-Right	710	210	240	275	330	YES
		Eastbound	Left-Right	120	30	50	50	115	YES
7.	Project West Access at Crows Nest	Southbound	Left-Right	50	<25	<25	<25	<25	YES
		Eastbound	Left-Thru	100	<25	<25	<25	<25	YES
		Westbound	Thru-Right	400	<25	<25	<25	<25	YES
8.	Project East Access at Crows Nest	Southbound	Left-Right	100	<25	<25	<25	<25	YES
		Eastbound	Left-Thru	400	<25	<25	<25	<25	YES
		Westbound	Thru-Right	120	<25	<25	<25	<25	YES

Notes:

- (1) Distance to the adjacent driveway (existing or proposed future development).
- (2) For a more conservative analysis, the forecast 95th-percentile queue lengths shown in the delay calculation worksheets have been rounded up to nearest 5-foot increment.

8. STATE HIGHWAY ANALYSIS

This section summarizes the project impact to State highway facilities. Table 8 shows the project trip contribution to roadways in the project vicinity during the PM peak hour.

STATE HIGHWAY ANALYSIS METHODOLOGIES

Intersection Delay Methodology

As previously noted in the Methodology section, the technique used to assess the performance of intersections within the California Department of Transportation jurisdiction is known as the intersection delay methodology based on procedures contained in the Highway Capacity Manual (Transportation Research Board, 6th Edition).

Thresholds of Significance

As previously noted, a project traffic impact is considered significant if the addition of project generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable operation (Level of Service D or better) to deficient operation (Level of Service E or F).

STATE ROUTE INTERSECTION OPERATIONS

Intersection Levels of Service

Table 8 shows the intersection Levels of Service at the State highway study intersections using the delay methodology. As shown in Table 8, the State highway study intersections are forecast to operate at Level of Service D or better during the peak hour conditions. Detailed intersection delay/Level of Service calculation worksheets for the State highway study intersections are provided in Appendix F.

To provide a conservative analysis for State Street and Florida Avenue (SR-74), this cumulative development analysis does not include re-routing of eastbound-westbound Florida Avenue traffic volumes with the proposed future realignment of SR-79 to the west of State Street, which is likely to alleviate congestion at this intersection.

Table 8
State Highway Intersection Levels of Service Summary

ID	Study Intersection	Control ¹	Existing				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS	Delay	LOS	Delay	LOS
6.	State Street at Florida Avenue	TS	22.4	C	29.2	C	26.0	C	31.4	C
PHASE 1			Opening Year (2021) Without Project (EAGC)				Opening Year (2021) With Project (EAGPC)			
ID	Study Intersection	Control ¹	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS	Delay	LOS	Delay	LOS
6.	State Street at Florida Avenue	TS	28.6	C	45.8	D	28.9	C	49.8	D
PHASE 2			Opening Year (2024) Without Project (EAGC)				Opening Year (2024) With Project (EAGPC)			
ID	Study Intersection	Control ¹	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS	Delay	LOS	Delay	LOS
6.	State Street at Florida Avenue	TS	29.9	C	51.1	D	31.0	C	53.6	D

Notes:

- (1) TS = Traffic Signal.
- (2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service

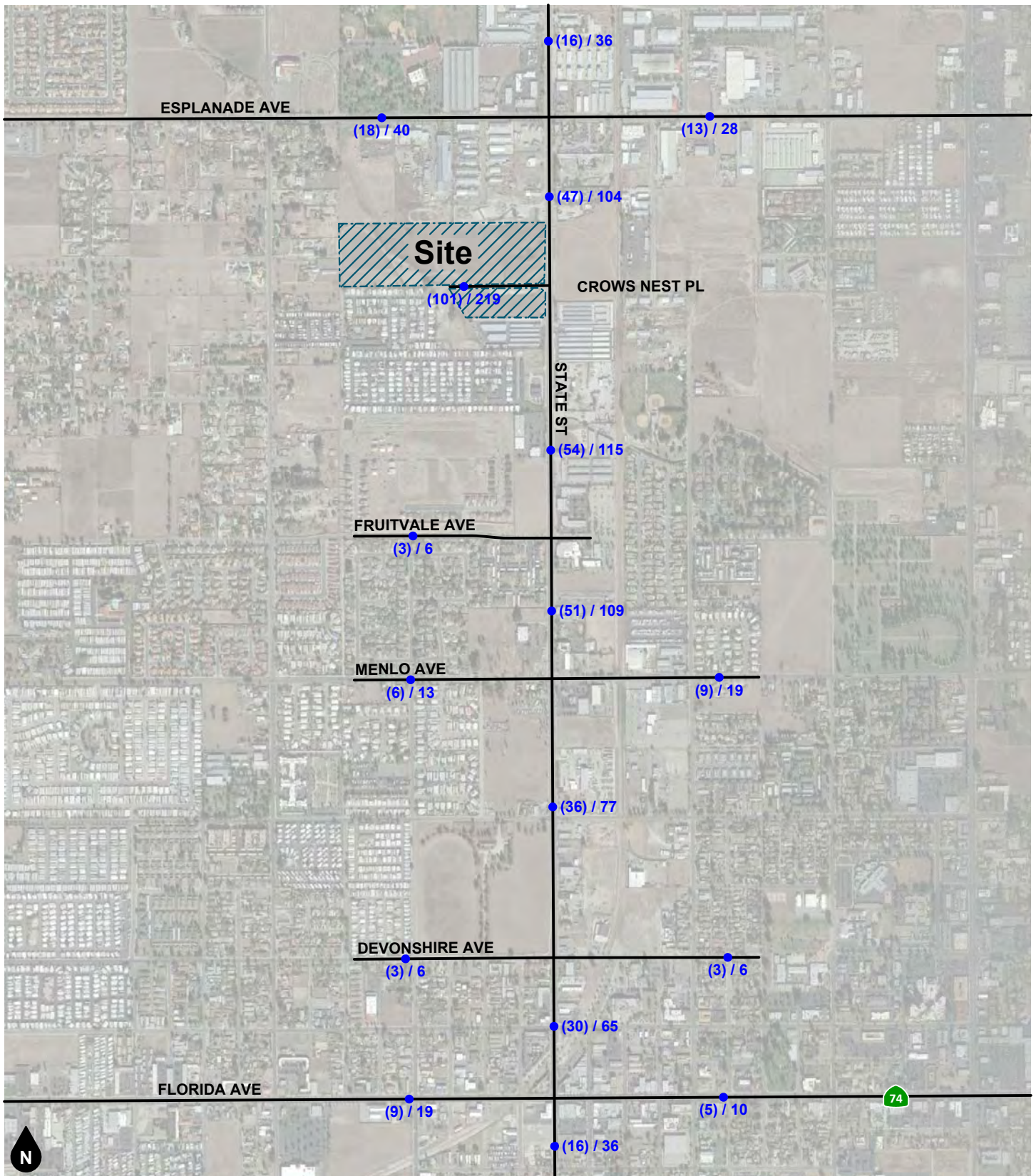


Figure 37
Project Trip Contribution

9. CONCLUSIONS

This section provides a summary of the transportation improvements identified in this analysis.

PROJECT DESIGN FEATURES

Two full access driveways are proposed on Crows Nest Place. Trucks to and from the site will primarily use the west access driveway. This analysis assumes the following improvements will be constructed by the project to provide project site access:

Project West Driveway at Crows Nest Place - #7

- Install outbound cross street stop-control.
- Construct the southbound approach to consist of one shared left-turn/right-turn lane.

Project East Driveway at Crows Nest Place - #8

- Install outbound cross street stop-control.
- Construct the southbound approach to consist of one shared left-turn/right-turn lane.

Site-adjacent improvements shall be constructed in conjunction with the project.

MITIGATION MEASURES

Direct Impacts

The proposed project is forecast to result in no significant traffic impacts at the study intersections for Existing Plus Project conditions, with improvements.

The following improvement is required with project development within the study area to maintain an acceptable Level of Service at the study intersection:

- State Street (NS) at Crows Nest Place (EW) - #2
 - Install Traffic Signal

Cumulative Impacts

In addition to the improvements previously identified for With Project conditions, as shown in the traffic impact analysis reports Opening Year Plus Project Plus Cumulative (EAGPC) conditions, the following improvements are required with cumulative development within the study area to maintain an acceptable Level of Service at the study intersection:

- State Street (NS) at Menlo Avenue (EW) - #4
 - Reconfigure eastbound approach striping to include one left turn lane and one shared through/right lane.
 - Reconfigure westbound approach striping to include one left turn lane, one through lane, and one right turn lane.
 - Modify traffic signal phasing to provide permissive eastbound and westbound phasing.

The proposed project shall contribute its fair share contribution to this cumulative impact as well as contribution to the City of Hemet Development Impact Fee (DIF) programs for the improvements for Opening Year (2021) Plus Project Plus Cumulative (EAGPC) listed above and other non-specified City determined capital improvement projects within the study area.

Development Impact Fee

Development Impact Fees (DIF) are collected on all new projects from developers building in the City of Hemet. The fees are used to build improvements to serve or to reduce the impact of new developments. Traffic capital improvement projects are funded in part by DIF Fund 329 (Bridges, Streets and Traffic Facilities). The Development Impact Fee provides a funding mechanism for arterial streets, traffic signals, interchange improvements. The City of Hemet Development Impact Fee costs included acquiring (right-of-way), designing, constructing and improving and maintaining of arterial streets from the current lane configuration to the ultimate lane configuration, new traffic signal as warranted, and interchange improvements. As required by City Code, all development projects are required to pay the Development Impact Fee as a condition of development.

At some locations, payment of the City of Hemet Development Impact Fee (DIF) would constitute mitigation of cumulative impacts. As mitigation for potential cumulative impacts, the proposed project shall contribute towards the identified improvements through an adopted traffic impact fee program, or through an equivalent fair share contribution for improvements not covered within such fee programs. Typically, applicable fees include the City of Hemet Development Impact Fee, and the County of Riverside Transportation Uniform Mitigation Fee (TUMF) and Road and Bridge Benefit District (RBBD) programs.

PROJECT TRIP CONTRIBUTION PERCENTAGES

The project fair share is based on the proportion of project peak hour traffic volume contributed to the improvement location relative to the total new peak hour traffic volume for Existing Plus Ambient Growth Plus Project Plus Cumulative (EAGPC) conditions for the phase which requires mitigation.

As shown in Table 9, the improvements required with project development to maintain an acceptable Level of Service at the study intersection and project driveways are shown as not applicable (NA) and will be funded and/or constructed by the applicant.

The project proportional intersection trip contributions have been calculated in Table 9 for study area intersections as a proportion of the anticipated Opening Year (2021) traffic volumes. The intersection percentages are based on the higher of the morning or evening peak hour volumes. Improvements at the project driveways are project design features which shall be constructed by the project.

Improvements which are required with cumulative development and not required under Opening Year (2021) Plus Project (EAGP) conditions within the study area shall be covered by the project fair share contribution estimate for cumulative impact as well as contributions to the City of Hemet Development Impact Fee (DIF) or other applicable fee programs. Costs estimates are sensitive to the quantity and location of work specified for a given installation. These values represent the relative magnitude of the cost and should be verified through the bidding process.

GENERAL RECOMMENDATIONS

On-site improvements and improvements adjacent to the site will be required in conjunction with the proposed development to ensure adequate circulation within the project.

Figure 39 summarizes the circulation recommendations for the proposed project.

- A construction work (temporary) traffic control plans are required by State law in accordance with the standards set forth in the California Manual of Uniform Traffic Control Devices (2014), and shall be submitted to the City of Hemet prior to the issuance of a grading permit or the start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closure and/or detour as well as haul

routes and hours of operation. Whenever possible, construction related truck trips should be restricted to off-peak hours, to the extent that conditions permit.

- All roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project should be constructed in accordance with applicable State/ Federal engineering standards and to the satisfaction of the City of Hemet Public Works Department.
- Site-adjacent roadways should be constructed and/or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Hemet Public Works Department.
- Adequate off-street parking should be provided to the satisfaction of City of Hemet Planning Department based on supporting parking and density analysis prepared for the project.
- The final grading, landscaping, and street improvement plans should demonstrate that sight distance standards are met in accordance with applicable City of Hemet/California Department of Transportation sight distance standards.

As is the case for any roadway design, the City of Hemet should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Table 9
Project Intersection Trip Contribution Percentages

IDStudy Intersection		Estimated Construction Cost ¹	Peak Hour	Peak Hour Volume				Project % at Intersection ²	Project Fair Share Cost	
				Existing	Existing Plus Ambient Growth With Project With Cumulative (EAGPC)	Project Trips	New Trips			Project % of New Trips
Year (2021)										
1.	State Street at Esplanade Avenue	\$0	AM PM	2,614 3,227	3,058 3,882	54 47	444 655	12.2% 7.2%	12.2%	\$0
2.	State Street at Crows Nest	NA ³	AM PM	1,314 1,645	1,682 2,200	111 101	368 555	30.2% 18.2%	30.2%	NA ³
3.	State Street at Fruitvale Avenue	\$0	AM PM	1,591 1,826	1,945 2,391	57 54	354 565	16.1% 9.6%	16.1%	\$0
4.	State Street at Menlo Avenue ⁴	\$100,000	AM PM	1,913 2,366	2,342 3,059	54 51	429 693	12.6% 7.4%	12.6%	\$12,587
5.	State Street at Devonshire Avenue	\$0	AM PM	1,446 1,798	1,872 2,546	43 36	426 748	10.1% 4.8%	10.1%	\$0
6.	State Street at Florida Avenue	\$0	AM PM	2,589 3,583	3,259 4,756	37 30	670 1,173	5.5% 2.6%	5.5%	\$0
7.	Project West Access at Crows Nest	NA ³	AM PM	11 20	96 91	85 71	85 71	100.0% 100.0%	100.0%	NA ³
8.	Project East Access at Crows Nest	NA ³	AM PM	11 20	122 121	111 101	111 101	100.0% 100.0%	100.0%	NA ³
TOTAL		\$100,000								\$12,587

Notes:

- (1) Cost estimate based on values from the San Bernardino County Transportation Authority [Preliminary Construction Cost Estimates For Congestion Management Program](#) (2003). Costs estimates are sensitive to the quantity and location of work specified for a given installation. These values represent the relative magnitude of the cost and should be verified through the bidding process.
- (2) Project share of new trips shown are the greater of the AM or PM percent contribution.
- (3) NA = Not Applicable. Project related improvement to mitigate direct impacts and/or improve level of service. Improvements to State Street and Crows Nest Place intersection and at project access intersections will be funded and/or constructed by the applicant.
- (4) Improvements to State Street and Menlo Avenue intersection to modify striping on Menlo Avenue and the signal control for the eastbound-westbound legs from split to permissive. The striping modification on existing pavement on the east and west legs of Menlow from 2 lane undivided to 2 lanes divided on the west leg and 3 lane undivided to 3 lanes divided on the east leg.

Table 10
Summary of Intersection Levels of Service

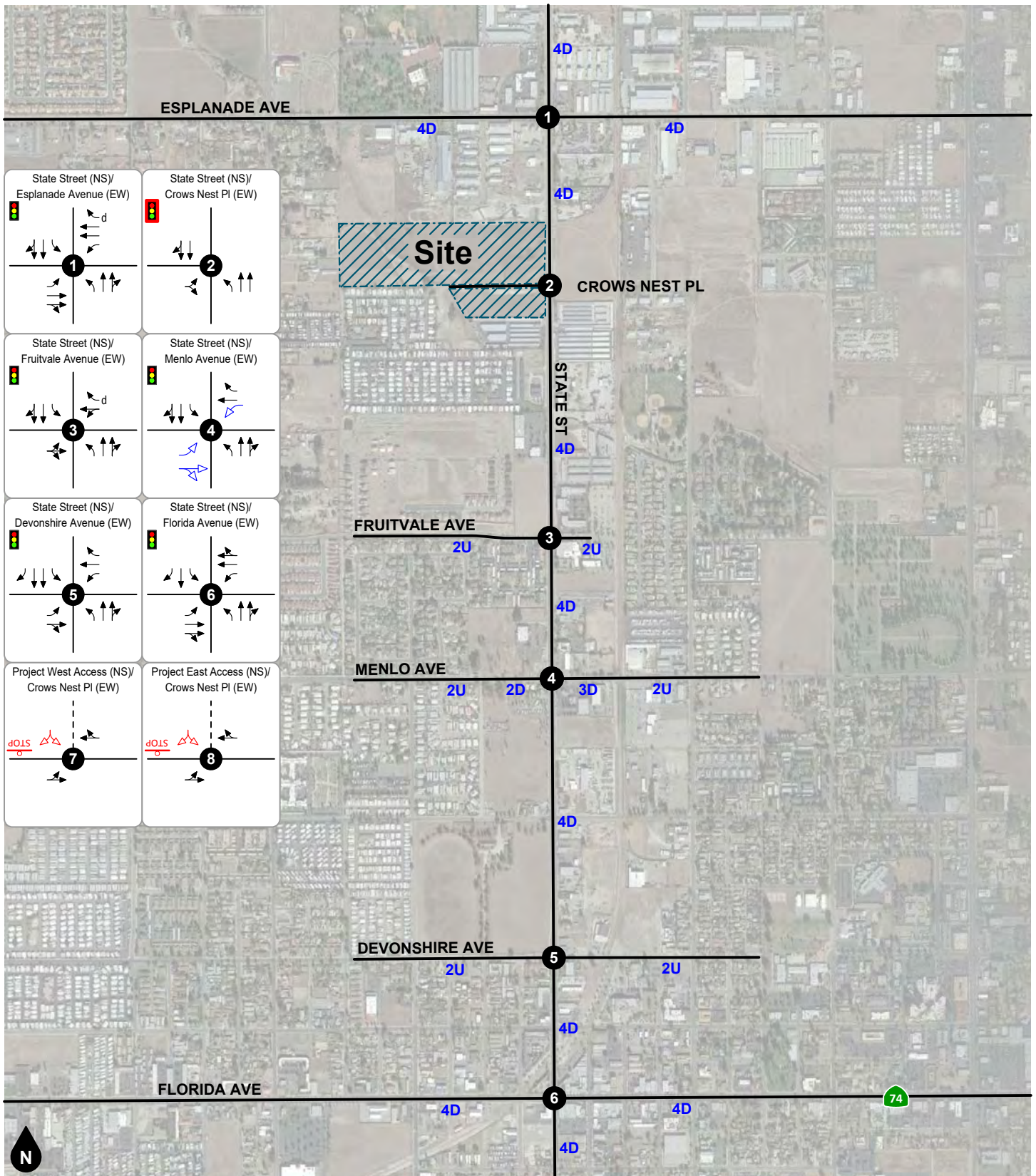
ID	Study Intersection	Control ¹	Existing				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS	Delay	LOS	Delay	LOS
1.	State Street at Esplanade Avenue	TS	21.4	C	27.1	C	24.3	C	28.0	C
2.	State Street at Crows Nest	CSS	17.5	C	21.2	C	36.5	E	82.9	F
	With Improvements	TS	-		-		8.2	A	15.0	B
3.	State Street at Fruitvale Avenue	TS	12.1	B	11.0	B	12.2	B	11.2	B
4.	State Street at Menlo Avenue	TS	31.8	C	41.1	D	36.9	D	42.5	D
5.	State Street at Devonshire Avenue	TS	16.1	B	16.5	B	16.5	B	16.5	B
6.	State Street at Florida Avenue	TS	22.4	C	29.2	C	26.0	C	31.4	C
7.	Project West Access at Crows Nest	CSS	-		-		10.0	A	9.8	A
8.	Project East Access at Crows Nest	CSS	-		-		9.9	A	9.8	A

PHASE 1			Existing Plus Ambient Growth (2021) With Project (EAGP)				Opening Year (2021) With Project (EAGPC)			
ID	Study Intersection	Control ¹	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS	Delay	LOS	Delay	LOS
1.	State Street at Esplanade Avenue	TS	24.4	C	28.4	C	25.2	C	33.7	C
2.	State Street at Crows Nest	CSS	23.8	C	34.2	D	30.1	D	70.1	F
	With Improvements	TS					5.4	A	19.8	B
3.	State Street at Fruitvale Avenue	TS	12.4	B	11.5	B	13.9	B	13.8	B
4.	State Street at Menlo Avenue	TS	37.7	D	42.9	D	49.2	D	81.5	F
	With Improvements	TS	-		-		20.6	C	27.2	C
5.	State Street at Devonshire Avenue	TS	16.7	B	16.7	B	17.0	B	17.4	B
6.	State Street at Florida Avenue	TS	26.1	C	32.2	C	28.9	C	49.8	D
7.	Project West Access at Crows Nest	CSS	9.4	A	9.4	A	9.4	A	9.4	A
8.	Project East Access at Crows Nest	CSS	9.1	A	9.1	A	9.1	A	9.1	A

PHASE 2			Existing Plus Ambient Growth (2024) With Project (EAGP)				Opening Year (2024) With Project (EAGPC)			
ID	Study Intersection	Control ¹	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay ²	LOS ³	Delay	LOS	Delay	LOS	Delay	LOS
1.	State Street at Esplanade Avenue	TS	25.0	C	30.7	C	26.1	C	39.0	D
2.	State Street at Crows Nest	CSS	46.7	E	144.5	F	74.2	F	411.3	F
	With Improvements	TS	8.3	A	18.6	B	8.4	A	21.5	C
3.	State Street at Fruitvale Avenue	TS	13.1	B	12.3	B	14.8	B	15.0	B
4.	State Street at Menlo Avenue	TS	40.3	D	51.3	D	54.3	D	106.5	F
	With Improvements	TS	-		-		21.7	C	30.0	C
5.	State Street at Devonshire Avenue	TS	17.1	B	17.1	B	17.5	B	17.9	B
6.	State Street at Florida Avenue	TS	27.1	C	33.9	C	31.0	C	53.6	D
7.	Project West Access at Crows Nest	CSS	10.0	A	9.8	A	10.0	A	9.8	A
8.	Project East Access at Crows Nest	CSS	9.9	A	9.9	A	9.9	A	9.9	A

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop.
- (2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst individual lane (or movements sharing a lane).
- (3) LOS = Level of Service



Legend

- | | |
|----------------------------|-----------------------------------|
| Traffic Signal | Existing Lane |
| Stop Sign | De Facto Right Turn Lane |
| #D #Lane Divided Roadway | Project Improvement |
| #U #Lane Undivided Roadway | Cumulative Conditions Improvement |
| | Project Driveway |

Figure 38
Summary of Improvements

APPENDICES

Appendix A Glossary

Appendix B Scoping Agreement

Appendix C Volume Count Worksheets

Appendix D Level of Service Worksheets

Appendix E Traffic Signal Warrant Worksheets

Appendix F Level of Service Worksheets - Caltrans

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

SCOPING AGREEMENT

Perrie Ilercil

From: Robert Vestal <RVestal@cityofhemet.org>
Sent: Tuesday, July 16, 2019 9:49 AM
To: Perrie Ilercil
Cc: DeAnna Robertson; Crystal Robinson
Subject: RE: S2A Modular project
Attachments: H P Kang MBA.VCF

Perrie:

The scoping agreement looks fine. You do not have to wait until August however please include a discussion regarding the potential effects of school traffic. Also please make sure to discuss minor roads and entrances in the report.

The planner will be H.P. Kang, see attached.

Robert L. Vestal, P.E.
Principal Engineer
Engineering Department
510 E. Florida Avenue
Hemet, CA 92543
O: 951.765.3847
F: [951.765.3878](tel:951.765.3878)

From: Crystal Robinson
Sent: Tuesday, July 09, 2019 2:22 PM
To: Robert Vestal <RVestal@cityofhemet.org>
Cc: DeAnna Robertson <DRobertson@cityofhemet.org>
Subject: FW: S2A Modular project

Hi Robert,

Do you know what this is and what I should do with it? I don't recall having a PO for this company, should we?

Crystal Robinson
Procurement Administrator
City of Hemet
951 765 2348

From: Perrie Ilercil [<mailto:perrie@ganddini.com>]
Sent: Tuesday, July 09, 2019 2:17 PM
To: Crystal Robinson <CRobinson@cityofhemet.org>; DeAnna Robertson <DRobertson@cityofhemet.org>
Subject: FW: S2A Modular project

Hi Crystal / Deanna,

See the attached traffic impact scoping agreement for the S2A Modular Manufacturing project in the City of Hemet.

Please review scoping agreement, and let me know if counts can be obtained prior to school starting in August for this roadway.

I also need the planner contact or weblink for listing and/or map of currently pending/recently approved projects of the other development within the City.

Thank you for your help with this matter.

Sincerely,

Perrie Ilercil, PE (AZ)

Senior Engineer



GANDDINI GROUP, INC.

550 Parkcenter Drive, Suite 202

Santa Ana, CA 92705

o. 714 795 3100 x 103

c. 949 257-3126

e: perrie@ganddini.com

www.ganddini.com

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the Riverside County Transportation Department requirements for traffic impact analysis of the following project. The analysis must follow the City of Hemet Guidelines.

Case No. CUP 19-004
Related Cases -
SP No. _____
EIR No. _____
GPA No. _____
CZ No. _____
Project Name: S2A Modular Manufacturing Project
Project Address: NWC of State Street and Crows Nest Place Hemet, CA
Project Description: Phased construction of a total of 250,000 SF manufacturing facility for modular housing.

	<u>Consultant</u>	<u>Developer</u>
Name:	<u>Ganddini Group, Inc., Perrie Ilercil</u>	<u>S2A Modular, Lucy Martinez Project Manager</u>
Address:	<u>550 Parkcenter Drive Suite 202</u> <u>Santa Ana, CA 92705</u>	<u>24360 Village Walk Place Ste. A</u> <u>Murrietta, CA</u>
Telephone:	<u>714-795-3100 office</u>	<u>951-760-4887 office</u>
Fax:	<u>949-257-3126 cell PERRIE ILERCIL</u>	<u>951-4472649 direct line</u>

A. Trip Generation Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Ed., 2017

Current GP Land Use			Proposed Land Use		
<u>Vacant</u>			<u>Manufacturing</u>		
Current Zoning	<u>C-M</u>		Proposed Zoning	<u>C-M</u>	
Current Trip Generation			Proposed Trip Generation		
	In	Out		In	Out
AM Trips	-	-		182	55
					237
PM Trips	-	-		69	151
					220
Internal Trip Allowance	☐ Yes	☒ No	(		% Trip Discount)
Pass-By Trip Allowance	☐ Yes	☒ No	(		% Trip Discount)

A passby trip discount of 25% is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

B. Trip Geographic Distribution: N 10/25 % S 10/25 % E 40/15 % W 40/35 %
(attach exhibit for detailed assignment)

C. Background Traffic

Project Build-out Year: 2024 Annual Ambient Growth Rate: 2.0 %

Phase Year(s) Phase 1 (2021) / Phase 2 (2024)

Other area projects to be analyzed: Please provide other development listing.

Model/Forecast methodology Ambient growth

Exhibit B – Scoping Agreement – Page 2

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|---|--|
| 1. State Street (NS) & Esplanade Avenue (EW) | 6. State Street (NS) & Florida Avenue (EW) |
| 2. State Street (NS) & Crows Nest Place (EW) | 7. _____ |
| 3. State Street (NS) & Fruitvale Avenue (EW) | 8. _____ |
| 4. State Street (NS) & Menlo Avenue (EW) | 9. _____ |
| 5. State Street (NS) & Devonshire Avenue (EW) | 10. _____ |

E. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? ☒ Yes ☐ No

If so, name of City Jurisdiction: San Jacinto

F. Site Plan (please attach reduced copy)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Transportation Department)

(NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.

Date of counts _____

NOTE Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to receipt of the fee.

Recommended by:



07.08.2019

Consultant's Representative

Date

Approved Scoping Agreement:

Riverside County Transportation
Department

Date

Scoping Agreement Submitted on _____

Revised on _____

Table 1
Project Trip Generation

Land Use/Vehicle Type	Source ¹	Trip Generation Rates per TSF ²						
		AM Peak Hour			PM Peak Hour			Daily
		% In	% Out	Total	% In	% Out	Total	
Manufacturing	130	77%	23%	0.62	31%	69%	0.67	3.93
Percent Cars	[a]	--	--	60.53%	--	--	76.83%	78.60%
Percent Trucks	[a]	--	--	39.47%	--	--	23.17%	21.40%
Car Trips per TSF		0.289	0.086	0.375	0.160	0.355	0.515	3.089
Truck Trips per TSF		0.188	0.056	0.244	0.048	0.107	0.155	0.841
<u>Truck Breakdown by Axle</u>	<u>Percent</u> ³							
2-Axle Trucks	32.70%	0.061	0.018	0.079	0.016	0.035	0.051	0.275
3-Axle Trucks	17.90%	0.034	0.010	0.044	0.009	0.019	0.028	0.151
4+ Axle Trucks	49.40%	0.093	0.028	0.121	0.024	0.053	0.077	0.415

Vehicle Trips Generated								
Land Use/Vehicle Type	Quantity (TSF)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Manufacturing	250.000							
Cars		72	22	94	40	89	129	772
Trucks								
2-Axle Trucks		15	5	20	4	9	13	69
3-Axle Trucks		9	3	11	2	5	7	38
4+ Axle Trucks		23	7	30	6	13	19	104
Subtotal Trucks		47	15	61	12	27	39	211
TOTAL VEHICLE TRIPS GENERATED		119	37	156	52	116	168	983

Passenger Car Equivalent (PCE) Trips Generated								
Land Use/Vehicle Type	Quantity (TSF)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Manufacturing	250.000							
Cars		72	22	94	40	89	129	772
Trucks	<u>PCE Factor</u> ⁴							
2-Axle Trucks	1.5	23	7	30	6	13	19	103
3-Axle Trucks	2.0	17	5	22	5	9	14	76
4+ Axle Trucks	3.0	70	21	91	18	40	58	311
Subtotal Trucks	--	110	33	143	29	62	91	490
TOTAL VEHICLE TRIPS GENERATED		182	55	237	69	151	220	1,262

Notes:

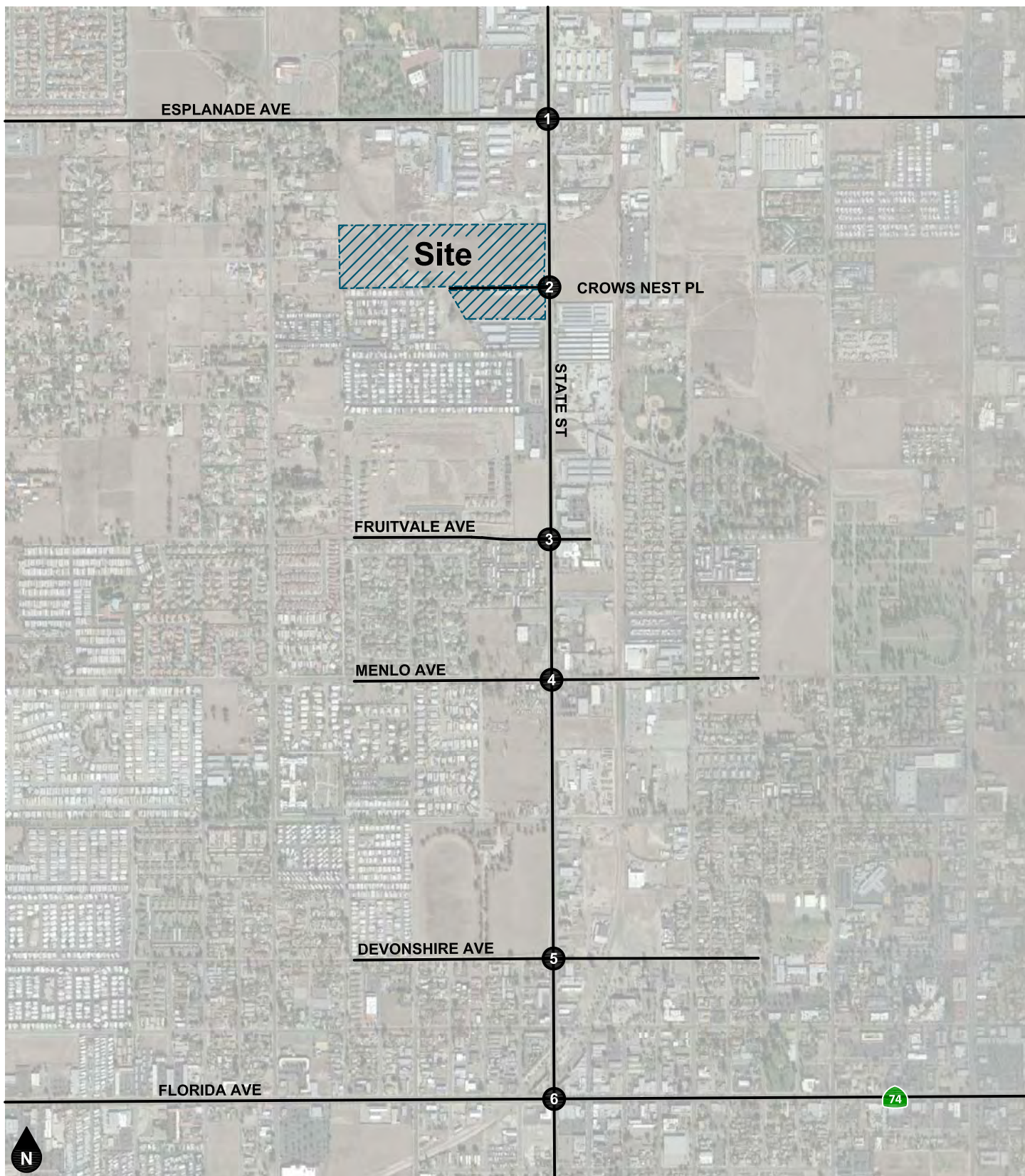
(1) Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Code ###.

[a] City of Fontana, Truck Trip Generation Study, August 2003. Light industrial values used for manufacturing.

(2) TSF = Thousand Square Feet

(3) Truck by axle percentages obtained from City of Fontana, Truck Trip Generation Study, August 2003.

(4) PCE factors recommended by County of San Bernardino Congestion Management Program.



Legend

Study Intersection

Figure 1
Project Location Map

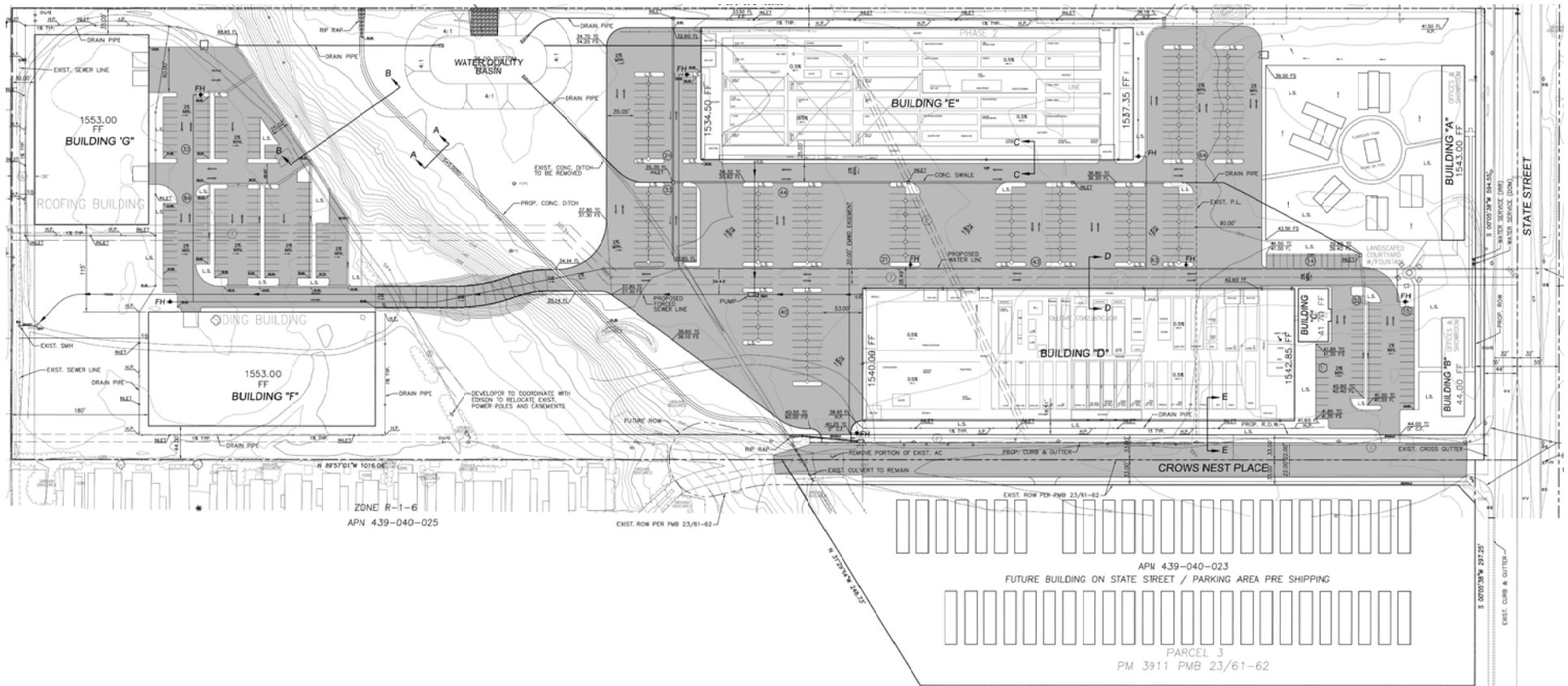


Figure 2
Site Plan

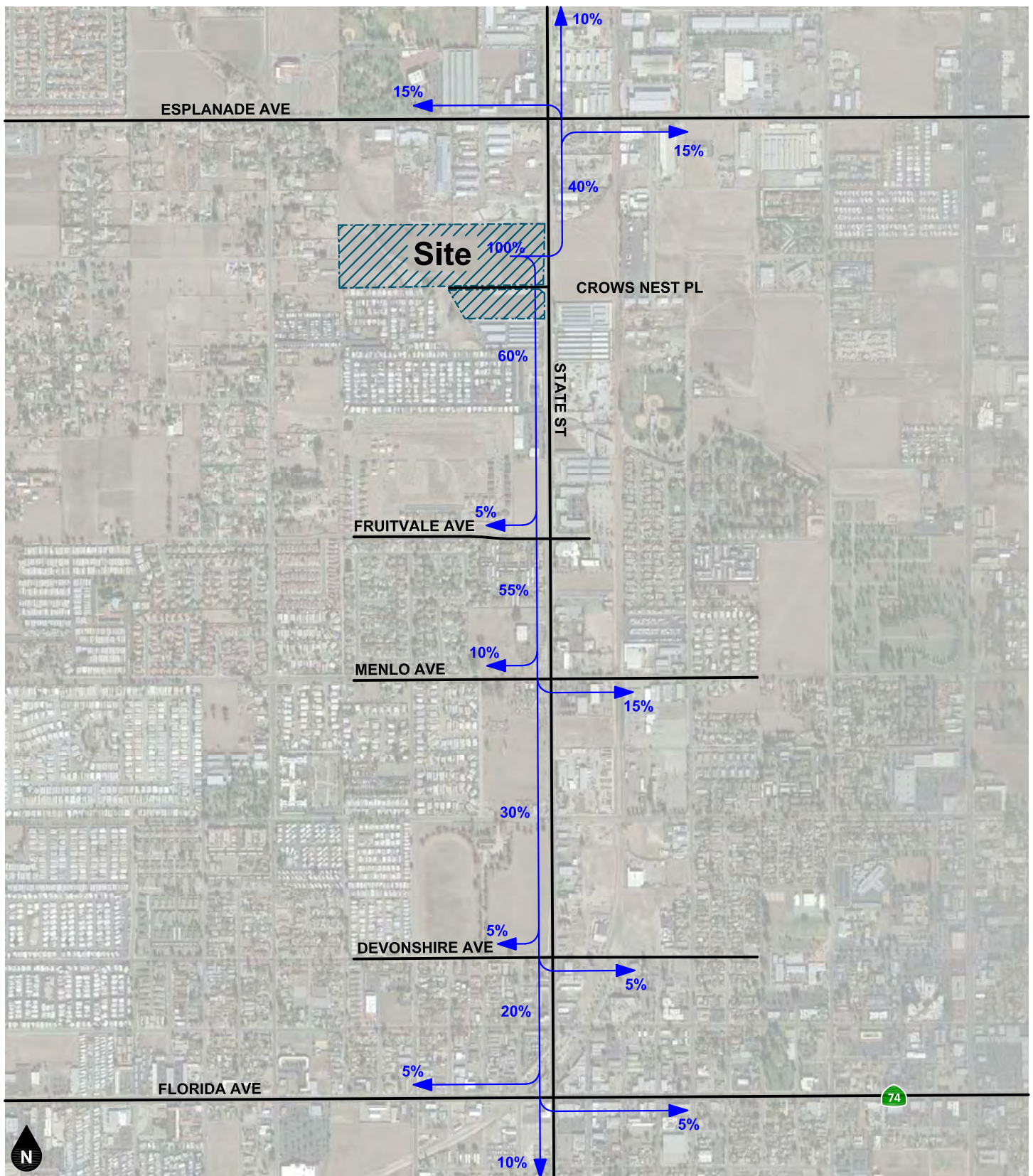
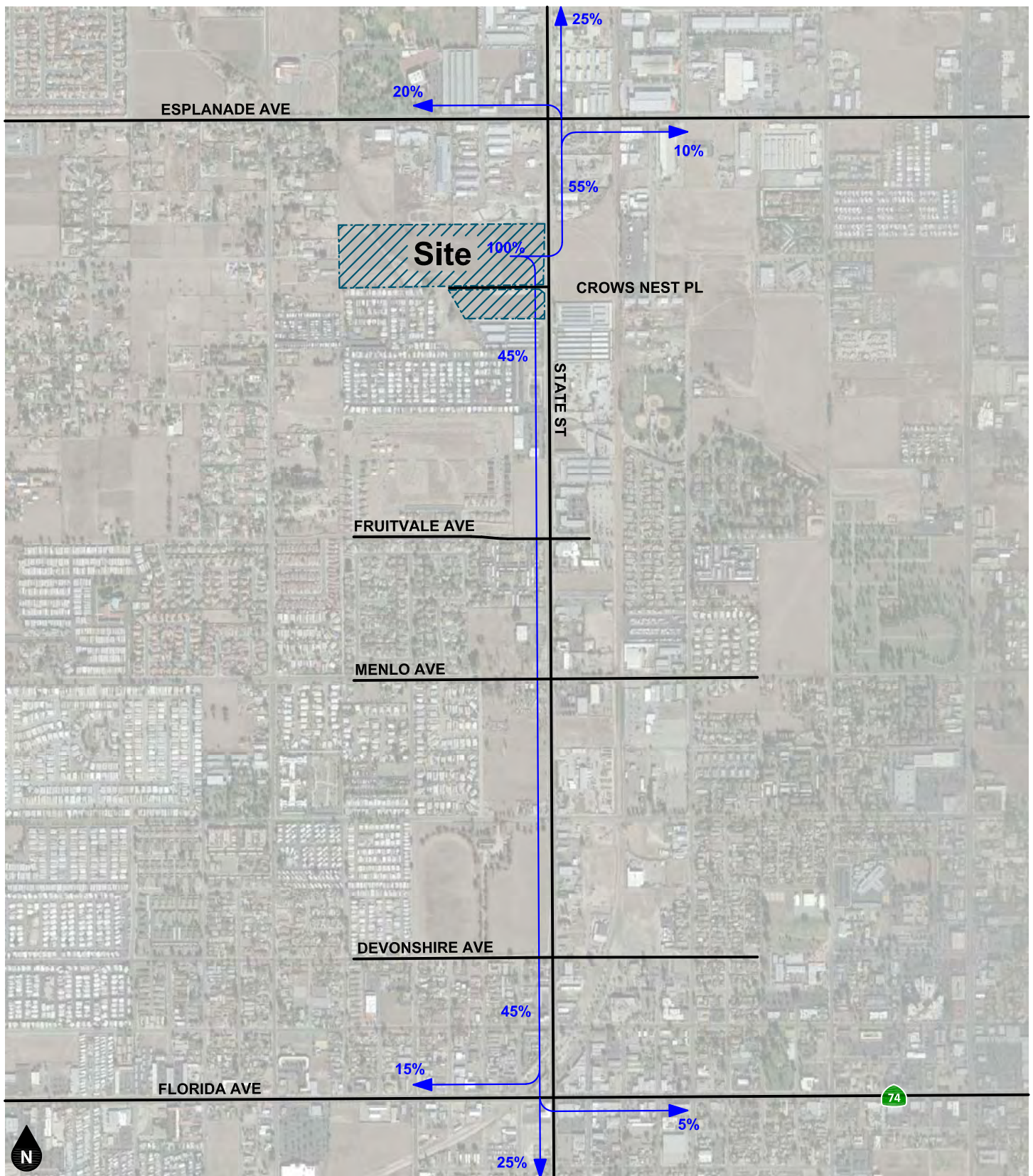


Figure 3
Project Trip Distribution - Cars



Legend

← 10% Percent To/From Project

Figure 4
Project Trip Distribution - Trucks

APPENDIX C

VOLUME COUNT WORKSHEETS

INTERSECTION TURNING MOVEMENT COUNTS

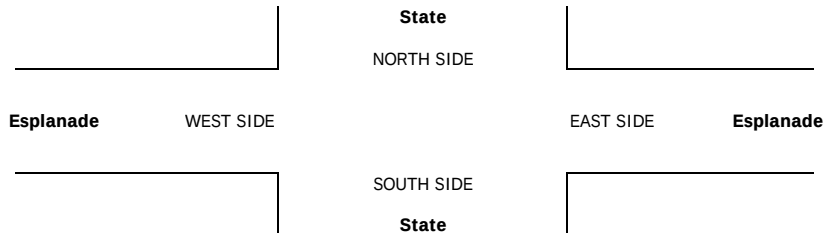
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/25/19 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Hemet State Esplanade	PROJECT #: LOCATION #: CONTROL:	SC2299 1 SIGNAL
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PCE Adjusted	NOTES:								AM PM MD OTHER OTHER	N W S E
	Class	1	2	3	4	5	6			
	Factor	1	1.5	2	3	2	2			

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

AM	7:00 AM	4	79	14	31	67	13	14	52	8	11	56	25	372
	7:15 AM	6	68	15	47	78	9	11	42	10	10	66	32	393
	7:30 AM	8	87	15	27	93	12	6	63	14	9	67	38	435
	7:45 AM	8	121	17	32	112	21	12	74	21	29	67	29	540
	8:00 AM	8	82	9	34	96	12	19	59	10	20	83	29	459
	8:15 AM	8	82	20	24	115	22	11	72	9	14	87	31	492
	8:30 AM	8	95	14	40	106	17	7	59	11	12	86	33	484
	8:45 AM	12	110	19	29	108	13	15	82	11	16	79	38	531
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	61	723	122	261	773	117	95	501	93	118	589	254	3,704
	APPROACH %	7%	80%	13%	23%	67%	10%	14%	73%	13%	12%	61%	26%	
	APP/DEPART	905	/	1,071	1,151	/	983	688	/	883	961	/	767	0
PM	BEGIN PEAK HR	7:45 AM												
	VOLUMES	31	380	59	129	428	71	49	262	50	74	322	121	1,974
	APPROACH %	7%	81%	13%	20%	68%	11%	14%	73%	14%	14%	62%	23%	
	PEAK HR FACTOR		0.809			0.953			0.851			0.986		0.914
	APP/DEPART	470	/	550	627	/	552	361	/	450	517	/	424	0
	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	18	108	20	51	152	18	18	90	19	25	90	34	640
	4:15 PM	21	116	29	45	126	18	25	103	20	26	97	32	656
	4:30 PM	19	123	43	44	128	18	16	98	11	27	97	33	655
	4:45 PM	21	105	24	28	150	17	26	118	17	21	112	30	667
	5:00 PM	16	144	46	67	140	27	27	107	26	31	120	30	778
	5:15 PM	20	114	32	52	126	16	13	124	6	15	113	21	650
	5:30 PM	9	135	34	57	115	18	18	92	11	32	98	22	639
	5:45 PM	12	116	32	50	120	21	21	100	20	28	101	50	668
	VOLUMES	136	959	258	392	1,054	152	163	831	128	203	826	250	5,351
	APPROACH %	10%	71%	19%	25%	66%	10%	15%	74%	11%	16%	65%	20%	
	APP/DEPART	1,353	/	1,372	1,598	/	1,385	1,122	/	1,481	1,279	/	1,114	0
	BEGIN PEAK HR	4:15 PM												
	VOLUMES	77	487	142	183	543	80	94	426	72	104	425	124	2,755
	APPROACH %	11%	69%	20%	23%	67%	10%	16%	72%	12%	16%	65%	19%	
	PEAK HR FACTOR		0.856			0.865			0.921			0.909		0.886
	APP/DEPART	706	/	705	805	/	719	592	/	750	653	/	582	0



INTERSECTION TURNING MOVEMENT COUNTS

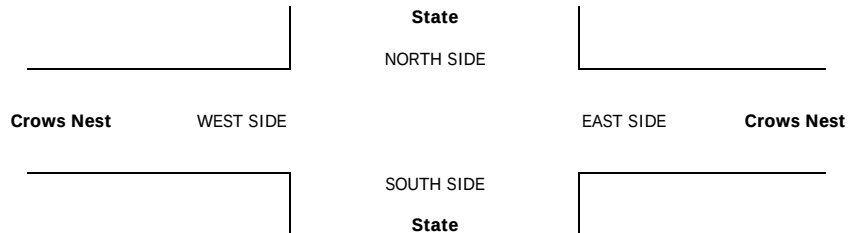
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/25/19 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Hemet State Crows Nest	PROJECT #: LOCATION #: CONTROL:	SC2299 2 STOP E
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PCE Adjusted	NOTES:								AM PM MD OTHER	▲ N ◀ W E ▶ ▼ S
	Class	1	2	3	4	5	6			
	Factor	1	1.5	2	3	2	2			

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	State			State			Crows Nest			Crows Nest			
LANES:	NL 0	NT 2	NR X	SL X	ST 2	SR 0	EL 0	ET X	ER 0	WL X	WT X	WR X	TOTAL

AM	7:00 AM	0	94	0	0	91	0	0	0	0	0	0	185
	7:15 AM	0	90	0	0	90	0	1	0	0	0	0	181
	7:30 AM	0	120	0	0	116	1	0	0	2	0	0	239
	7:45 AM	0	132	0	0	150	0	2	0	1	0	0	285
	8:00 AM	0	110	0	0	118	0	1	0	1	0	0	230
	8:15 AM	0	113	0	0	125	0	1	0	0	0	0	239
	8:30 AM	1	111	0	0	124	0	1	0	0	0	0	237
	8:45 AM	2	125	0	0	132	0	0	0	1	0	0	260
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	895	0	0	945	1	6	0	5	0	0	1,854
	APPROACH %	0%	100%	0%	0%	100%	0%	55%	0%	45%	0%	0%	
	APP/DEPART	898	/	901	946	/	950	11	/	0	0	/	4
PM	BEGIN PEAK HR	7:30 AM											
	VOLUMES	0	475	0	0	509	1	4	0	4	0	0	992
	APPROACH %	0%	100%	0%	0%	100%	0%	50%	0%	50%	0%	0%	
	PEAK HR FACTOR	0.899			0.849			0.667			0.000		
	APP/DEPART	475	/	479	510	/	513	8	/	0	0	/	1
	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	145	0	0	181	5	0	0	1	0	0	331
	4:15 PM	1	179	0	0	163	1	1	0	2	0	0	347
	4:30 PM	0	174	0	0	163	2	0	0	0	0	0	339
	4:45 PM	0	159	0	0	173	1	1	0	2	0	0	336
	5:00 PM	2	186	0	0	191	1	3	0	1	0	0	384
	5:15 PM	2	152	0	0	151	2	3	0	1	0	0	311
	5:30 PM	1	172	0	0	151	3	2	0	0	0	0	328
	5:45 PM	0	156	0	0	159	1	1	0	1	0	0	318
	VOLUMES	6	1,323	0	0	1,330	16	11	0	8	0	0	2,692
	APPROACH %	0%	100%	0%	0%	99%	1%	58%	0%	42%	0%	0%	
	APP/DEPART	1,329	/	1,333	1,346	/	1,338	18	/	0	0	/	22
	BEGIN PEAK HR	4:15 PM											
	VOLUMES	3	698	0	0	689	5	5	0	5	0	0	1,404
	APPROACH %	0%	100%	0%	0%	99%	1%	50%	0%	50%	0%	0%	
	PEAK HR FACTOR	0.932			0.904			0.643			0.000		
	APP/DEPART	701	/	703	694	/	694	9	/	0	0	/	8



INTERSECTION TURNING MOVEMENT COUNTS

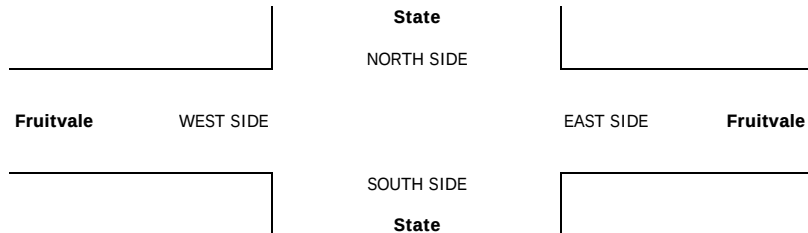
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/25/19 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Hemet State Fruitvale	PROJECT #: LOCATION #: CONTROL:	SC2299 3 SIGNAL
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PCE Adjusted	NOTES:								AM PM MD OTHER OTHER	▲ N ◀ W E ▶ ▼ S
	Class	1	2	3	4	5	6			
	Factor	1	1.5	2	3	2	2			

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

AM	7:00 AM	4	90	10	4	83	10	7	1	5	1	0	0	214
	7:15 AM	4	81	14	13	84	6	5	8	6	1	0	3	224
	7:30 AM	8	115	21	7	107	9	6	13	7	5	0	0	298
	7:45 AM	4	133	30	16	116	6	11	7	18	9	0	2	350
	8:00 AM	3	105	20	15	109	8	5	5	10	1	1	3	285
	8:15 AM	9	103	17	11	100	8	5	3	7	2	1	4	270
	8:30 AM	3	97	10	7	115	5	14	5	3	9	2	7	277
	8:45 AM	5	122	14	6	119	8	6	3	9	7	1	7	306
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	39	845	135	79	831	59	59	45	64	35	5	26	2,221
	APPROACH %	4%	83%	13%	8%	86%	6%	35%	27%	38%	53%	8%	39%	
	APP/DEPART	1,019	/	930	969	/	930	167	/	259	66	/	103	0
PM	BEGIN PEAK HR	7:30 AM												
	VOLUMES	24	456	87	49	431	31	27	28	41	17	2	9	1,201
	APPROACH %	4%	80%	15%	10%	84%	6%	28%	29%	43%	61%	7%	32%	
	PEAK HR FACTOR	0.853			0.929			0.682			0.636			0.859
	APP/DEPART	567	/	492	511	/	489	96	/	164	28	/	57	0
	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	20	137	2	2	171	12	6	1	16	14	2	6	389
	4:15 PM	9	149	8	2	164	6	11	0	9	5	1	8	371
	4:30 PM	13	170	4	6	144	13	6	0	10	12	7	3	387
	4:45 PM	8	134	5	4	161	9	9	0	12	4	7	5	358
	5:00 PM	14	180	4	0	184	10	12	0	11	16	8	6	444
	5:15 PM	8	145	1	2	140	13	10	0	11	4	2	1	337
	5:30 PM	14	148	4	0	153	20	8	0	9	5	1	5	366
	5:45 PM	11	137	3	2	145	7	5	0	13	9	1	1	334
	VOLUMES	96	1,199	30	18	1,261	89	67	1	91	69	29	35	2,984
	APPROACH %	7%	90%	2%	1%	92%	6%	42%	1%	57%	52%	22%	26%	
	APP/DEPART	1,325	/	1,301	1,367	/	1,421	159	/	49	133	/	214	0
	BEGIN PEAK HR	4:15 PM												
	VOLUMES	43	633	20	12	652	38	38	0	42	37	23	22	1,559
	APPROACH %	6%	91%	3%	2%	93%	5%	48%	0%	53%	45%	28%	27%	
	PEAK HR FACTOR	0.880			0.906			0.870			0.683			0.878
	APP/DEPART	696	/	693	702	/	731	80	/	32	82	/	104	0



INTERSECTION TURNING MOVEMENT COUNTS

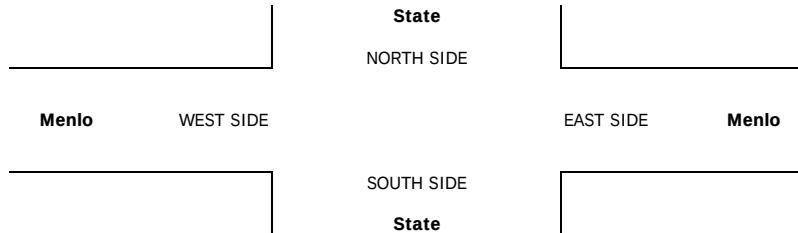
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/25/19 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Hemet State Menlo	PROJECT #: LOCATION #: CONTROL:	SC2299 4 SIGNAL
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PCE Adjusted	NOTES:								AM PM MD OTHER OTHER	◀ W	▲ N S ▼	E ▶
	Class	1	2	3	4	5	6					
	Factor	1	1.5	2	3	2	2					

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

AM	7:00 AM	3	82	7	15	75	3	8	17	10	5	23	26	272
	7:15 AM	2	80	5	16	67	4	12	20	3	5	22	26	259
	7:30 AM	7	101	3	23	81	7	13	36	4	4	26	30	333
	7:45 AM	3	122	13	24	114	2	17	35	10	2	39	40	419
	8:00 AM	5	91	15	19	106	4	18	30	9	5	25	28	353
	8:15 AM	5	101	8	23	74	11	3	29	5	7	42	22	327
	8:30 AM	6	88	13	18	97	9	14	39	9	3	36	15	344
	8:45 AM	4	99	8	16	115	6	9	37	9	4	36	32	373
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	33	762	69	152	727	46	93	242	58	34	247	217	2,678
	APPROACH %	4%	88%	8%	16%	79%	5%	24%	62%	15%	7%	50%	44%	
	APP/DEPART	864	/	1,072	924	/	819	393	/	463	498	/	325	0
PM	BEGIN PEAK HR	7:45 AM												
	VOLUMES	18	401	48	83	390	26	52	133	33	17	141	104	1,443
	APPROACH %	4%	86%	10%	17%	78%	5%	24%	61%	15%	6%	54%	40%	
	PEAK HR FACTOR	0.847			0.896			0.882			0.807			0.861
	APP/DEPART	466	/	557	498	/	439	217	/	263	262	/	185	0
	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	15	120	18	36	148	12	9	45	10	11	54	26	502
	4:15 PM	5	137	18	28	149	20	8	54	10	12	61	24	523
	4:30 PM	9	122	13	17	143	24	16	60	11	12	35	29	488
	4:45 PM	6	111	15	19	140	12	13	51	6	9	53	20	452
	5:00 PM	5	154	20	45	161	29	18	48	2	11	41	24	556
	5:15 PM	4	116	22	31	110	21	14	71	7	5	58	20	477
	5:30 PM	6	148	25	36	119	15	15	53	6	12	61	24	518
	5:45 PM	3	110	15	36	124	9	12	48	11	15	46	23	451
	VOLUMES	53	1,016	144	247	1,093	139	103	428	62	87	408	189	3,966
	APPROACH %	4%	84%	12%	17%	74%	9%	17%	72%	10%	13%	60%	28%	
	APP/DEPART	1,212	/	1,307	1,479	/	1,242	593	/	818	683	/	599	0
	BEGIN PEAK HR	4:15 PM												
	VOLUMES	25	523	65	108	592	84	54	212	28	44	190	96	2,019
	APPROACH %	4%	85%	11%	14%	76%	11%	18%	72%	10%	13%	58%	29%	
	PEAK HR FACTOR	0.860			0.835			0.855			0.854			0.908
	APP/DEPART	612	/	673	784	/	664	294	/	385	330	/	298	0



INTERSECTION TURNING MOVEMENT COUNTS

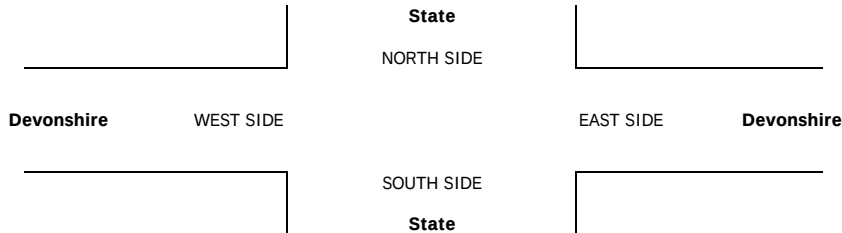
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/25/19 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Hemet State Devonshire	PROJECT #: LOCATION #: CONTROL:	SC2299 5 SIGNAL
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PCE Adjusted	NOTES:	AM	▲ N ◀ W E ▶ ▼ S					
	Class	1		2	3	4	5	6
	Factor	1		1.5	2	3	2	2

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

AM	7:00 AM	3	70	1	3	62	11	13	9	3	2	6	6	187
	7:15 AM	2	76	2	7	64	8	13	11	9	0	4	6	200
	7:30 AM	2	109	2	10	78	13	11	20	5	1	6	0	256
	7:45 AM	2	111	1	12	87	15	14	22	12	4	7	1	288
	8:00 AM	4	94	3	13	103	8	12	26	5	4	9	4	283
	8:15 AM	8	90	2	10	79	13	12	10	10	1	7	6	247
	8:30 AM	1	88	2	6	76	12	14	17	6	3	11	8	243
	8:45 AM	2	97	6	11	117	17	16	25	15	1	9	5	319
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	24	734	19	71	665	96	104	138	65	16	57	35	2,020
	APPROACH %	3%	95%	2%	9%	80%	11%	34%	45%	21%	15%	53%	33%	
	APP/DEPART	776	/	873	831	/	745	306	/	227	108	/	176	0
PM	BEGIN PEAK HR	8:00 AM												
	VOLUMES	15	369	13	39	375	49	54	77	36	9	35	23	1,091
	APPROACH %	4%	93%	3%	8%	81%	11%	32%	46%	22%	14%	52%	34%	
	PEAK HR FACTOR	0.946			0.798			0.755			0.767			0.856
	APP/DEPART	396	/	445	463	/	420	166	/	128	66	/	98	0
	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	8	120	6	8	135	21	25	26	17	2	18	12	395
	4:15 PM	9	138	0	8	149	13	18	19	15	2	15	9	393
	4:30 PM	8	123	1	11	128	17	14	14	12	2	14	2	345
	4:45 PM	9	133	3	6	140	14	14	35	15	0	15	9	391
	5:00 PM	14	136	2	10	143	18	25	18	12	0	20	10	406
	5:15 PM	6	119	1	7	98	14	25	29	15	1	30	6	349
	5:30 PM	14	144	0	7	137	8	12	22	8	1	12	15	379
	5:45 PM	8	104	4	8	110	18	24	28	15	3	15	6	342
	VOLUMES	76	1,015	17	64	1,039	122	156	190	107	11	137	68	2,998
	APPROACH %	7%	92%	1%	5%	85%	10%	34%	42%	24%	5%	64%	31%	
	APP/DEPART	1,108	/	1,238	1,224	/	1,156	452	/	270	215	/	335	0
	BEGIN PEAK HR	4:15 PM												
	VOLUMES	40	529	6	34	559	61	71	86	53	4	63	29	1,534
	APPROACH %	7%	92%	1%	5%	85%	9%	34%	41%	25%	4%	66%	30%	
	PEAK HR FACTOR	0.949			0.962			0.816			0.814			0.946
	APP/DEPART	575	/	629	654	/	616	209	/	126	96	/	164	0



INTERSECTION TURNING MOVEMENT COUNTS

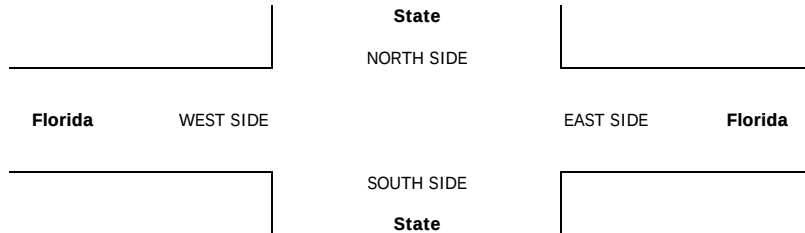
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 7/25/19 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Hemet State Florida	PROJECT #: LOCATION #: CONTROL:	SC2299 6 SIGNAL
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PCE Adjusted	NOTES:	AM	▲ N ◀ W E ▶ ▼ S					
	Class	1		2	3	4	5	6
	Factor	1		1.5	2	3	2	2

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

AM	7:00 AM	8	33	7	7	38	13	19	86	2	3	124	12	350
	7:15 AM	4	52	8	21	28	23	20	91	7	4	117	6	380
	7:30 AM	8	72	9	13	28	19	17	110	7	8	139	15	442
	7:45 AM	9	80	12	16	52	8	22	130	7	19	136	17	507
	8:00 AM	5	62	8	25	53	14	25	128	5	9	136	11	479
	8:15 AM	10	70	12	13	55	12	17	109	7	8	117	8	435
	8:30 AM	7	54	16	17	46	17	14	134	5	3	157	10	479
	8:45 AM	5	81	11	20	59	21	12	153	10	14	171	7	562
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	56	503	82	129	357	126	145	940	48	67	1,096	85	3,632
	APPROACH %	9%	79%	13%	21%	58%	21%	13%	83%	4%	5%	88%	7%	
	APP/DEPART	640	/	732	612	/	472	1,133	/	1,151	1,247	/	1,277	0
PM	BEGIN PEAK HR	8:00 AM												
	VOLUMES	27	266	47	73	213	64	67	524	26	34	580	35	1,954
	APPROACH %	8%	78%	14%	21%	61%	18%	11%	85%	4%	5%	89%	5%	
	PEAK HR FACTOR	0.875			0.881			0.884			0.849			0.870
	APP/DEPART	340	/	368	349	/	272	617	/	644	649	/	671	0
	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	19	68	12	26	77	39	21	218	21	24	216	12	751
	4:15 PM	15	62	13	37	79	37	34	201	14	19	191	16	715
	4:30 PM	18	67	12	30	81	41	39	195	12	14	184	20	711
	4:45 PM	10	77	20	31	85	32	25	199	12	25	205	20	738
	5:00 PM	12	73	16	48	69	47	26	259	14	18	243	15	837
	5:15 PM	7	78	12	28	66	31	27	225	13	24	208	11	727
	5:30 PM	13	72	17	19	63	38	37	231	11	16	219	24	758
	5:45 PM	10	79	11	33	78	25	22	186	12	16	199	4	673
	VOLUMES	103	574	111	251	597	289	229	1,712	108	154	1,662	122	5,908
	APPROACH %	13%	73%	14%	22%	53%	25%	11%	84%	5%	8%	86%	6%	
	APP/DEPART	787	/	924	1,136	/	858	2,048	/	2,073	1,937	/	2,053	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	42	299	64	125	282	148	114	914	50	82	873	70	3,059
	APPROACH %	10%	74%	16%	22%	51%	27%	11%	85%	5%	8%	85%	7%	
	PEAK HR FACTOR	0.948			0.847			0.904			0.931			0.914
	APP/DEPART	404	/	482	554	/	413	1,077	/	1,102	1,024	/	1,063	0



APPENDIX D

LEVEL OF SERVICE WORKSHEETS

EXISTING

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro
Report File: G:\...\AME.pdf

Scenario 1 Existing
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.518	21.4	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.030	23.6	C
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.451	12.1	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.698	31.8	C
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.373	16.1	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	EB Left	0.574	22.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.518

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Peak Hour Factor	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	138	21	47	155	25	18	95	18	27	117	44
Total Analysis Volume [veh/h]	45	550	85	186	620	102	71	380	72	106	467	175
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	3	28	28	39	31	31	21	12	12	21	12	12
g / C, Green / Cycle	0.04	0.41	0.41	0.56	0.44	0.44	0.30	0.17	0.17	0.30	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.17	0.17	0.18	0.19	0.19	0.06	0.12	0.12	0.08	0.13	0.11
s, saturation flow rate [veh/h]	1810	1900	1812	1028	1900	1808	1221	1900	1797	1257	3618	1615
c, Capacity [veh/h]	77	769	733	621	840	800	408	315	298	423	634	283
d1, Uniform Delay [s]	32.96	14.99	15.01	8.47	13.54	13.54	18.38	27.78	27.82	18.72	27.39	26.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.76	1.70	1.79	0.27	1.67	1.76	0.20	3.30	3.63	0.31	1.69	2.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.42	0.42	0.30	0.44	0.44	0.17	0.73	0.74	0.25	0.74	0.62
d, Delay for Lane Group [s/veh]	39.72	16.69	16.80	8.73	15.21	15.30	18.58	31.08	31.46	19.03	29.08	28.95
Lane Group LOS	D	B	B	A	B	B	B	C	C	B	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.85	3.58	3.45	1.14	3.83	3.67	0.77	3.62	3.50	1.17	3.50	2.63
50th-Percentile Queue Length [ft/ln]	21.29	89.44	86.18	28.53	95.82	91.66	19.15	90.58	87.41	29.21	87.48	65.63
95th-Percentile Queue Length [veh/ln]	1.53	6.44	6.21	2.05	6.90	6.60	1.38	6.52	6.29	2.10	6.30	4.73
95th-Percentile Queue Length [ft/ln]	38.32	160.98	155.13	51.35	172.48	164.98	34.46	163.04	157.33	52.58	157.46	118.13

Movement, Approach, & Intersection Results

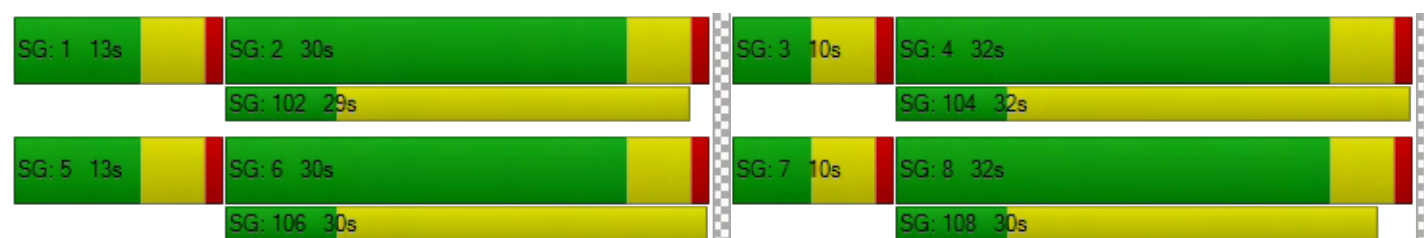
d_M, Delay for Movement [s/veh]	39.72	16.73	16.80	8.73	15.25	15.30	18.58	31.23	31.46	19.03	29.08	28.95
Movement LOS	D	B	B	A	B	B	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	18.26			13.92			29.54			27.62		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	21.40											
Intersection LOS	C											
Intersection V/C	0.518											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.700			2.750			2.619			2.895		
Crosswalk LOS	B			B			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	714			714			771			771		
d_b, Bicycle Delay [s]	14.46			14.46			13.21			13.21		
I_b,int, Bicycle LOS Score for Intersection	2.121			2.309			1.991			2.177		
Bicycle LOS	B			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	23.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	629	674	1	5	5
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	181	194	0	1	1
Total Analysis Volume [veh/h]	0	723	775	1	6	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	9.24	0.00	0.00	0.00	23.64	11.34
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	3.11	3.11
d_A, Approach Delay [s/veh]	0.00		0.00		17.49	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	12.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.451

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Peak Hour Factor	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	176	33	19	166	12	10	11	16	7	1	3
Total Analysis Volume [veh/h]	36	703	134	76	665	48	41	43	63	27	3	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	28	0	12	27	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	42	42	4	43	43	9	9	9
g / C, Green / Cycle	0.04	0.60	0.60	0.06	0.62	0.62	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.23	0.04	0.19	0.19	0.10	0.03	0.01
s, saturation flow rate [veh/h]	1810	1900	1796	1810	1900	1855	1403	1043	1615
c, Capacity [veh/h]	66	1143	1080	101	1179	1152	246	232	208
d1, Uniform Delay [s]	33.17	7.18	7.19	32.60	6.22	6.22	29.91	27.24	26.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.87	0.95	1.00	10.89	0.67	0.69	2.31	0.25	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.38	0.38	0.76	0.31	0.31	0.60	0.13	0.07
d, Delay for Lane Group [s/veh]	40.04	8.13	8.19	43.49	6.89	6.90	32.22	27.49	26.96
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	2.76	2.63	1.50	2.02	1.98	2.41	0.43	0.20
50th-Percentile Queue Length [ft/ln]	17.29	69.04	65.71	37.42	50.58	49.58	60.26	10.86	4.99
95th-Percentile Queue Length [veh/ln]	1.25	4.97	4.73	2.69	3.64	3.57	4.34	0.78	0.36
95th-Percentile Queue Length [ft/ln]	31.13	124.27	118.28	67.36	91.05	89.24	108.47	19.55	8.99

Movement, Approach, & Intersection Results

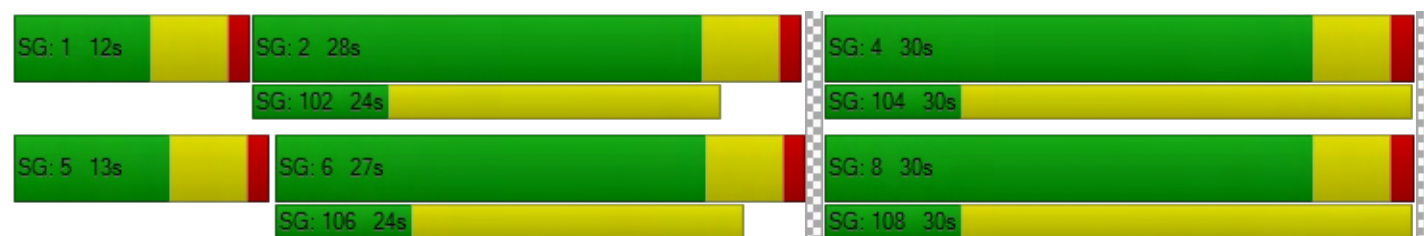
d_M, Delay for Movement [s/veh]	40.04	8.15	8.19	43.49	6.90	6.90	32.22	32.22	32.22	27.49	27.49	26.96
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	9.47			10.42			32.22			27.32		
Approach LOS	A			B			C			C		
d_I, Intersection Delay [s/veh]	12.11											
Intersection LOS	B											
Intersection V/C	0.451											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.830			2.833			1.853			2.055		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	657			629			714			714		
d_b, Bicycle Delay [s]	15.78			16.46			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.280			2.211			1.802			1.632		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report
Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	154	18	32	150	10	20	51	12	6	54	40
Total Analysis Volume [veh/h]	28	617	73	128	600	40	80	204	50	26	217	160
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	40	0	16	31	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	2	26	26	8	31	31	18	13	13
g / C, Green / Cycle	0.03	0.31	0.31	0.09	0.37	0.37	0.21	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.18	0.19	0.07	0.17	0.17	0.18	0.13	0.10
s, saturation flow rate [veh/h]	1810	1900	1830	1810	1900	1859	1830	1890	1615
c, Capacity [veh/h]	53	584	562	163	699	684	384	299	255
d1, Uniform Delay [s]	40.73	25.05	25.07	37.93	20.49	20.49	32.50	34.62	33.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.94	4.54	4.73	8.11	2.20	2.25	6.14	5.34	2.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.53	0.60	0.60	0.79	0.46	0.46	0.87	0.81	0.63
d, Delay for Lane Group [s/veh]	48.67	29.59	29.80	46.04	22.69	22.74	38.64	39.96	36.00
Lane Group LOS	D	C	C	D	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.69	6.53	6.34	2.87	4.94	4.84	6.92	5.06	3.12
50th-Percentile Queue Length [ft/ln]	17.18	163.24	158.47	71.75	123.40	121.09	173.07	126.55	78.01
95th-Percentile Queue Length [veh/ln]	1.24	10.72	10.47	5.17	8.58	8.45	11.24	8.75	5.62
95th-Percentile Queue Length [ft/ln]	30.93	268.01	261.69	129.15	214.49	211.32	280.94	218.80	140.42

Movement, Approach, & Intersection Results

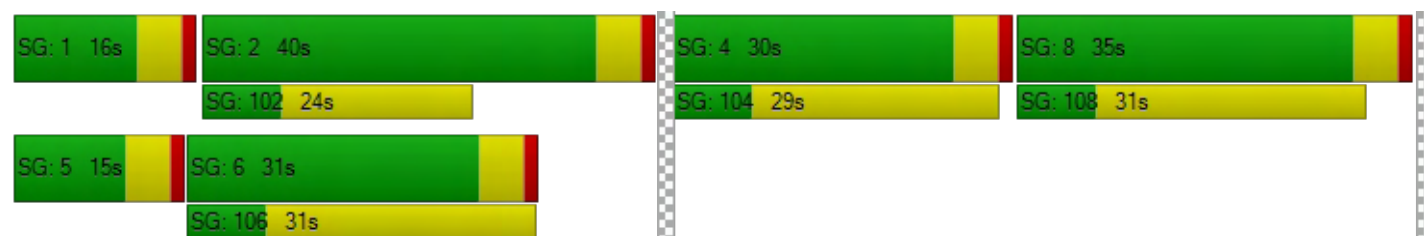
d_M, Delay for Movement [s/veh]	48.67	29.68	29.80	46.04	22.71	22.74	38.64	38.64	38.64	39.96	39.96	36.00
Movement LOS	D	C	C	D	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	30.43			26.60			38.64			38.39		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	31.79											
Intersection LOS	C											
Intersection V/C	0.698											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.676			2.801			2.114			2.287		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	824			612			706			588		
d_b, Bicycle Delay [s]	14.71			20.48			17.79			21.18		
I_b,int, Bicycle LOS Score for Intersection	2.152			2.193			2.111			2.225		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.1
 Level Of Service: B
 Volume to Capacity (v/c): 0.373

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	143	5	15	145	19	21	29	14	4	13	9
Total Analysis Volume [veh/h]	22	570	20	61	581	76	83	118	56	14	54	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	29	0	10	29	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	41	41	4	42	42	16	9	16	7	7
g / C, Green / Cycle	0.03	0.54	0.54	0.05	0.57	0.57	0.21	0.13	0.21	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.01	0.16	0.16	0.03	0.16	0.05	0.05	0.10	0.01	0.03	0.02
s, saturation flow rate [veh/h]	1810	1900	1877	1810	3618	1615	1571	1798	1390	1900	1615
c, Capacity [veh/h]	48	1025	1013	90	2037	909	446	227	327	168	143
d1, Uniform Delay [s]	36.11	9.45	9.45	35.16	8.56	7.54	24.55	31.81	23.89	32.18	31.96
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.80	0.71	0.72	8.60	0.35	0.18	0.20	5.36	0.05	1.09	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.29	0.29	0.68	0.29	0.08	0.19	0.77	0.04	0.32	0.25
d, Delay for Lane Group [s/veh]	42.91	10.16	10.17	43.76	8.91	7.72	24.75	37.16	23.95	33.28	32.84
Lane Group LOS	D	B	B	D	A	A	C	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.47	2.39	2.37	1.26	2.08	0.50	1.21	3.30	0.20	0.95	0.61
50th-Percentile Queue Length [ft/ln]	11.72	59.75	59.22	31.43	52.12	12.58	30.21	82.46	4.92	23.73	15.33
95th-Percentile Queue Length [veh/ln]	0.84	4.30	4.26	2.26	3.75	0.91	2.18	5.94	0.35	1.71	1.10
95th-Percentile Queue Length [ft/ln]	21.09	107.56	106.60	56.57	93.82	22.64	54.38	148.43	8.86	42.71	27.59

Movement, Approach, & Intersection Results

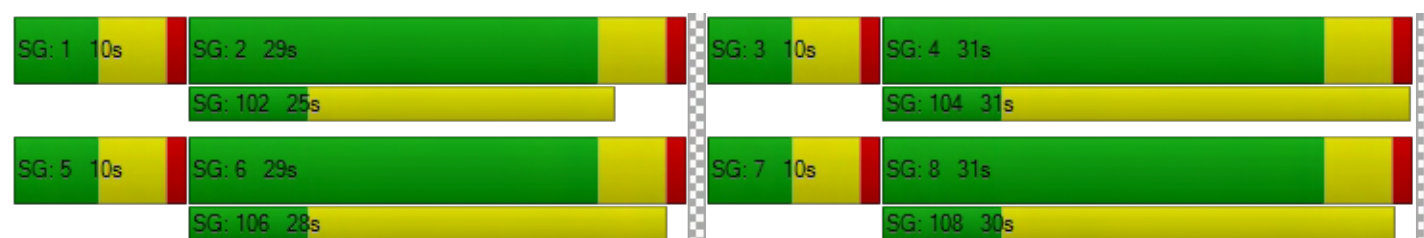
d_M, Delay for Movement [s/veh]	42.91	10.17	10.17	43.76	8.91	7.72	24.75	37.16	37.16	23.95	33.28	32.84
Movement LOS	D	B	B	D	A	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	11.34			11.75			33.15			31.86		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	16.08											
Intersection LOS	B											
Intersection V/C	0.373											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	27.31			27.31			27.31			27.31		
I_p,int, Pedestrian LOS Score for Intersection	2.719			2.858			2.063			2.195		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	640			640			693			693		
d_b, Bicycle Delay [s]	17.34			17.34			16.01			16.01		
I_b,int, Bicycle LOS Score for Intersection	2.065			2.152			1.984			1.730		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	101	18	28	81	24	26	199	10	13	221	13
Total Analysis Volume [veh/h]	41	405	71	111	324	97	102	798	39	51	884	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	29	29	29	29	29	29	5	23	23	3	21	21
g / C, Green / Cycle	0.42	0.42	0.42	0.42	0.42	0.42	0.07	0.32	0.32	0.05	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.13	0.12	0.17	0.06	0.06	0.22	0.22	0.03	0.25	0.25
s, saturation flow rate [veh/h]	1073	1900	1803	933	1900	1615	1810	1900	1869	1810	1900	1862
c, Capacity [veh/h]	387	793	752	382	793	674	136	612	602	85	559	548
d1, Uniform Delay [s]	19.67	13.66	13.68	19.52	14.36	12.68	31.80	20.70	20.70	32.79	23.27	23.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	1.00	1.07	1.92	1.56	0.45	8.11	1.39	1.42	6.75	3.66	3.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.31	0.31	0.29	0.41	0.14	0.75	0.69	0.69	0.60	0.85	0.85
d, Delay for Lane Group [s/veh]	20.22	14.66	14.75	21.44	15.92	13.12	39.91	22.10	22.12	39.54	26.93	27.00
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.53	2.44	2.36	1.50	3.46	0.91	1.92	5.71	5.62	0.97	7.27	7.14
50th-Percentile Queue Length [ft/ln]	13.14	61.11	59.05	37.45	86.58	22.70	47.93	142.71	140.48	24.24	181.76	178.43
95th-Percentile Queue Length [veh/ln]	0.95	4.40	4.25	2.70	6.23	1.63	3.45	9.63	9.51	1.75	11.69	11.52
95th-Percentile Queue Length [ft/ln]	23.64	110.00	106.29	67.41	155.85	40.87	86.28	240.66	237.67	43.64	292.31	287.97

Movement, Approach, & Intersection Results

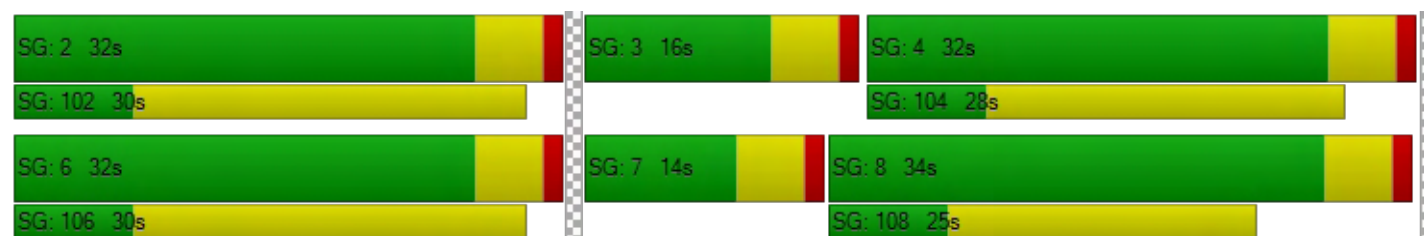
d_M, Delay for Movement [s/veh]	20.22	14.70	14.75	21.44	15.92	13.12	39.91	22.11	22.12	39.54	26.96	27.00
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.14			16.57			24.04			27.61		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.574											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.420			2.676			2.790			2.892		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	771			771			829			771		
d_b, Bicycle Delay [s]	13.21			13.21			12.01			13.21		
I_b,int, Bicycle LOS Score for Intersection	1.986			2.437			2.334			2.375		
Bicycle LOS	A			B			B			B		

Sequence

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



S2A Modular Manufacturing

Vistro File: G:\...\PM.vistro
Report File: G:\...\PME.pdf

Scenario 1 Existing
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.666	27.1	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.034	30.4	D
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.468	11.0	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.755	41.1	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.398	16.4	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Right	0.662	29.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Peak Hour Factor	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	161	47	60	180	26	31	141	24	34	141	41
Total Analysis Volume [veh/h]	102	645	187	242	718	105	124	562	95	138	562	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	30	0	12	30	0	11	32	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	6	34	34	46	35	35	29	18	18	29	18	18
g / C, Green / Cycle	0.07	0.40	0.40	0.54	0.41	0.41	0.34	0.21	0.21	0.34	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.06	0.23	0.23	0.26	0.22	0.22	0.11	0.18	0.18	0.12	0.16	0.10
s, saturation flow rate [veh/h]	1810	1900	1755	920	1900	1816	1151	1900	1806	1107	3618	1615
c, Capacity [veh/h]	133	757	699	502	775	741	395	403	383	371	775	346
d1, Uniform Delay [s]	38.76	19.97	19.97	12.59	19.18	19.18	20.85	32.13	32.15	21.46	31.15	29.28
k, delay calibration	0.11	0.50	0.50	0.25	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.87	3.12	3.37	1.64	2.72	2.84	0.45	4.58	4.86	0.62	1.31	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.57	0.57	0.48	0.54	0.54	0.31	0.83	0.84	0.37	0.73	0.47
d, Delay for Lane Group [s/veh]	47.63	23.09	23.34	14.23	21.89	22.02	21.30	36.72	37.01	22.08	32.46	30.29
Lane Group LOS	D	C	C	B	C	C	C	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.34	6.74	6.27	2.33	6.33	6.08	1.65	6.68	6.39	1.86	5.14	2.84
50th-Percentile Queue Length [ft/ln]	58.41	168.47	156.87	58.24	158.18	151.93	41.17	166.89	159.68	46.41	128.41	70.94
95th-Percentile Queue Length [veh/ln]	4.21	11.00	10.38	4.19	10.45	10.12	2.96	10.91	10.53	3.34	8.85	5.11
95th-Percentile Queue Length [ft/ln]	105.14	274.90	259.57	104.83	261.31	253.00	74.10	272.83	263.30	83.54	221.33	127.70

Movement, Approach, & Intersection Results

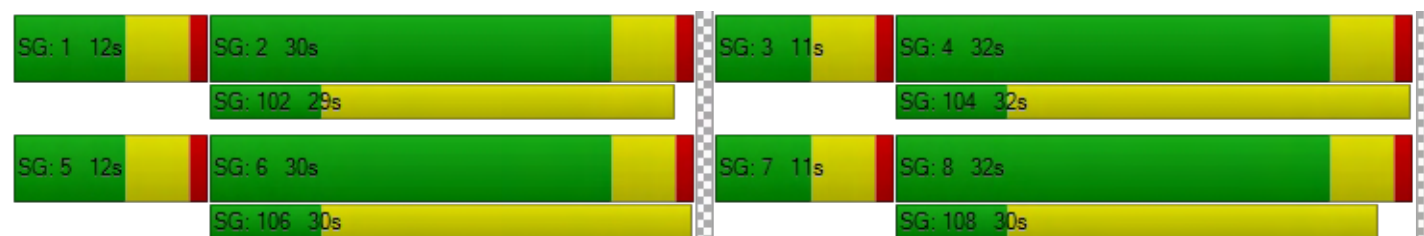
d_M, Delay for Movement [s/veh]	47.63	23.17	23.34	14.23	21.95	22.02	21.30	36.83	37.01	22.08	32.46	30.29
Movement LOS	D	C	C	B	C	C	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	25.88			20.20			34.39			30.39		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.11											
Intersection LOS	C											
Intersection V/C	0.666											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.833			2.858			2.750			3.047		
Crosswalk LOS	C			C			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.330			2.438			2.204			2.272		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	30.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	818	807	6	5	5
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	223	220	2	1	1
Total Analysis Volume [veh/h]	4	894	882	7	5	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.01	0.00	0.03	0.01
d_M, Delay for Movement [s/veh]	9.70	0.00	0.00	0.00	30.43	12.05
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.00	0.13	0.13
95th-Percentile Queue Length [ft/ln]	0.39	0.00	0.00	0.00	3.37	3.37
d_A, Approach Delay [s/veh]	0.04		0.00		21.24	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.468

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Peak Hour Factor	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	211	7	4	218	13	13	0	14	12	8	7
Total Analysis Volume [veh/h]	57	844	26	16	870	50	51	0	56	49	31	30
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	30	0	10	28	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	45	45	1	43	43	9	9	9
g / C, Green / Cycle	0.05	0.64	0.64	0.02	0.61	0.61	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.03	0.23	0.23	0.01	0.24	0.24	0.11	0.05	0.02
s, saturation flow rate [veh/h]	1810	1900	1880	1810	1900	1864	957	1482	1615
c, Capacity [veh/h]	88	1212	1199	36	1157	1136	198	272	207
d1, Uniform Delay [s]	32.73	5.97	5.97	33.95	7.08	7.08	30.40	27.94	27.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.68	0.84	0.84	8.24	1.04	1.06	2.27	0.59	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.36	0.36	0.44	0.40	0.40	0.54	0.29	0.15
d, Delay for Lane Group [s/veh]	40.42	6.80	6.81	42.19	8.12	8.14	32.67	28.53	27.46
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	2.40	2.37	0.34	2.97	2.92	1.80	1.19	0.43
50th-Percentile Queue Length [ft/ln]	27.04	59.90	59.34	8.42	74.14	72.89	44.91	29.71	10.85
95th-Percentile Queue Length [veh/ln]	1.95	4.31	4.27	0.61	5.34	5.25	3.23	2.14	0.78
95th-Percentile Queue Length [ft/ln]	48.67	107.81	106.82	15.16	133.45	131.20	80.85	53.47	19.54

Movement, Approach, & Intersection Results

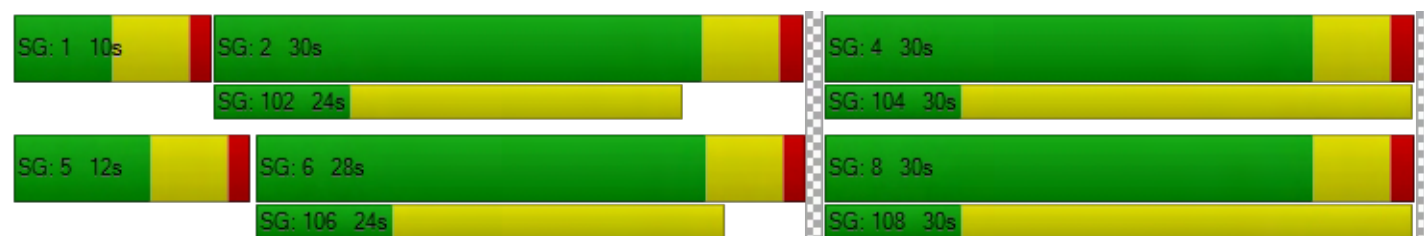
d_M, Delay for Movement [s/veh]	40.42	6.81	6.81	42.19	8.13	8.14	32.67	32.67	32.67	28.53	28.53	27.46
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	8.87			8.71			32.67			28.24		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	11.05											
Intersection LOS	B											
Intersection V/C	0.468											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.921			2.915			1.860			1.992		
Crosswalk LOS	C			C			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	714			657			714			714		
d_b, Bicycle Delay [s]	14.46			15.78			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.324			2.332			1.736			1.741		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	41.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.755

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	169	21	35	191	27	17	68	9	14	61	31
Total Analysis Volume [veh/h]	32	674	84	140	764	108	69	273	36	57	245	123
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	15	35	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	36	36	10	42	42	25	20	20
g / C, Green / Cycle	0.03	0.32	0.32	0.09	0.38	0.38	0.22	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.20	0.20	0.08	0.23	0.23	0.20	0.16	0.08
s, saturation flow rate [veh/h]	1810	1900	1827	1810	1900	1819	1852	1882	1615
c, Capacity [veh/h]	53	611	588	166	730	698	415	340	292
d1, Uniform Delay [s]	52.80	31.78	31.79	49.25	27.30	27.30	41.63	44.02	40.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.18	0.14	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.42	4.90	5.11	11.07	3.79	3.96	12.12	9.55	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.63	0.63	0.85	0.61	0.61	0.91	0.89	0.42
d, Delay for Lane Group [s/veh]	63.23	36.68	36.90	60.33	31.08	31.25	53.75	53.57	40.97
Lane Group LOS	E	D	D	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.03	9.47	9.16	4.22	9.77	9.38	11.08	8.72	2.97
50th-Percentile Queue Length [ft/ln]	25.68	236.75	228.88	105.47	244.19	234.57	277.02	217.89	74.25
95th-Percentile Queue Length [veh/ln]	1.85	14.52	14.12	7.59	14.89	14.41	16.54	13.56	5.35
95th-Percentile Queue Length [ft/ln]	46.23	362.93	352.94	189.68	372.32	360.16	413.49	338.93	133.65

Movement, Approach, & Intersection Results

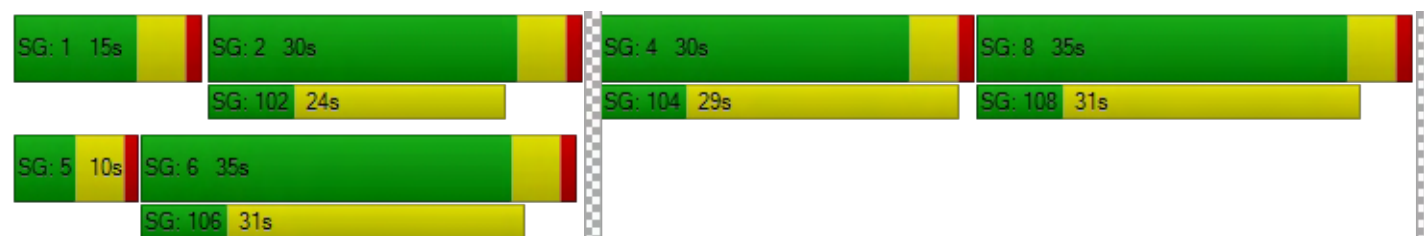
d_M, Delay for Movement [s/veh]	63.23	36.77	36.90	60.33	31.15	31.25	53.75	53.75	53.75	53.57	53.57	40.97
Movement LOS	E	D	D	E	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	37.86			35.20			53.75			49.92		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	41.10											
Intersection LOS	D											
Intersection V/C	0.755											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.730			2.869			2.220			2.349		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	455			545			545			455		
d_b, Bicycle Delay [s]	32.84			29.09			29.09			32.84		
I_b,int, Bicycle LOS Score for Intersection	2.211			2.395			2.183			2.261		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report

Intersection 5: State Street / Devonshire Avenue

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.4
 Level Of Service: B
 Volume to Capacity (v/c): 0.398

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Peak Hour Factor	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	164	2	11	173	19	22	26	16	1	20	9
Total Analysis Volume [veh/h]	50	656	7	42	693	75	88	106	66	5	78	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	14	28	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	3	46	46	3	46	46	16	10	16	6	6
g / C, Green / Cycle	0.04	0.58	0.58	0.04	0.58	0.58	0.19	0.12	0.19	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.03	0.17	0.17	0.02	0.19	0.05	0.06	0.10	0.00	0.04	0.02
s, saturation flow rate [veh/h]	1810	1900	1893	1810	3618	1615	1571	1780	1367	1900	1615
c, Capacity [veh/h]	79	1099	1095	72	2078	928	394	222	291	142	120
d1, Uniform Delay [s]	37.74	8.64	8.64	37.88	8.99	7.62	27.37	34.03	26.39	35.84	35.15
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.17	0.71	0.71	7.41	0.43	0.17	0.28	5.72	0.02	3.32	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.30	0.30	0.59	0.33	0.08	0.22	0.78	0.02	0.55	0.30
d, Delay for Lane Group [s/veh]	45.91	9.35	9.35	45.29	9.42	7.79	27.65	39.75	26.41	39.16	36.52
Lane Group LOS	D	A	A	D	A	A	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.10	2.63	2.62	0.92	2.74	0.52	1.42	3.52	0.08	1.57	0.70
50th-Percentile Queue Length [ft/ln]	27.56	65.79	65.59	23.09	68.39	13.08	35.60	87.89	1.93	39.32	17.47
95th-Percentile Queue Length [veh/ln]	1.98	4.74	4.72	1.66	4.92	0.94	2.56	6.33	0.14	2.83	1.26
95th-Percentile Queue Length [ft/ln]	49.61	118.42	118.05	41.57	123.11	23.54	64.08	158.20	3.48	70.78	31.45

Movement, Approach, & Intersection Results

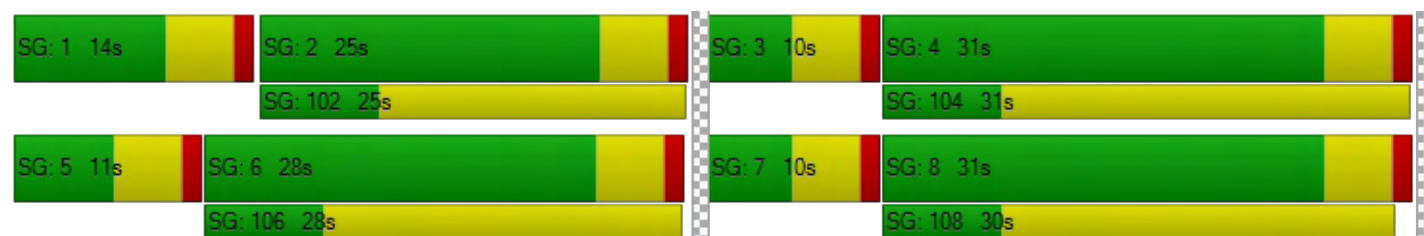
d_M, Delay for Movement [s/veh]	45.91	9.35	9.35	45.29	9.42	7.79	27.65	39.75	39.75	26.41	39.16	36.52
Movement LOS	D	A	A	D	A	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.92			11.13			35.65			37.82		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	16.45											
Intersection LOS	B											
Intersection V/C	0.398											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.767			2.895			2.084			2.191		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	500			575			650			650		
d_b, Bicycle Delay [s]	22.50			20.31			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.148			2.228			1.989			1.756		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	29.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	96	20	40	90	47	37	293	16	26	280	22
Total Analysis Volume [veh/h]	54	383	81	160	361	189	147	1170	63	104	1119	89
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	12	38	0	10	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	31	31	31	31	31	31	39	30	30	39	29	29
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.49	0.37	0.37	0.49	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.17	0.19	0.12	0.19	0.33	0.33	0.14	0.32	0.32
s, saturation flow rate [veh/h]	1037	1900	1787	943	1900	1615	763	1900	1866	720	1900	1851
c, Capacity [veh/h]	321	734	691	352	734	624	361	701	689	343	678	661
d1, Uniform Delay [s]	25.50	17.22	17.25	25.17	18.60	17.06	16.62	23.66	23.70	16.20	24.41	24.44
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.28	0.28	0.11	0.29	0.29
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.13	1.17	1.27	4.20	2.35	1.25	0.74	9.39	9.79	0.49	11.11	11.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.32	0.33	0.46	0.49	0.30	0.41	0.89	0.89	0.30	0.90	0.90
d, Delay for Lane Group [s/veh]	26.63	18.39	18.52	29.37	20.95	18.31	17.36	33.05	33.48	16.69	35.52	36.10
Lane Group LOS	C	B	B	C	C	B	B	C	C	B	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.89	3.03	2.91	2.86	5.07	2.42	1.40	11.89	11.80	0.96	12.16	11.99
50th-Percentile Queue Length [ft/ln]	22.37	75.87	72.82	71.56	126.71	60.52	34.89	297.35	295.10	23.96	303.89	299.75
95th-Percentile Queue Length [veh/ln]	1.61	5.46	5.24	5.15	8.76	4.36	2.51	17.55	17.44	1.73	17.87	17.67
95th-Percentile Queue Length [ft/ln]	40.26	136.56	131.08	128.80	219.02	108.93	62.80	438.75	435.96	43.13	446.83	441.72

Movement, Approach, & Intersection Results

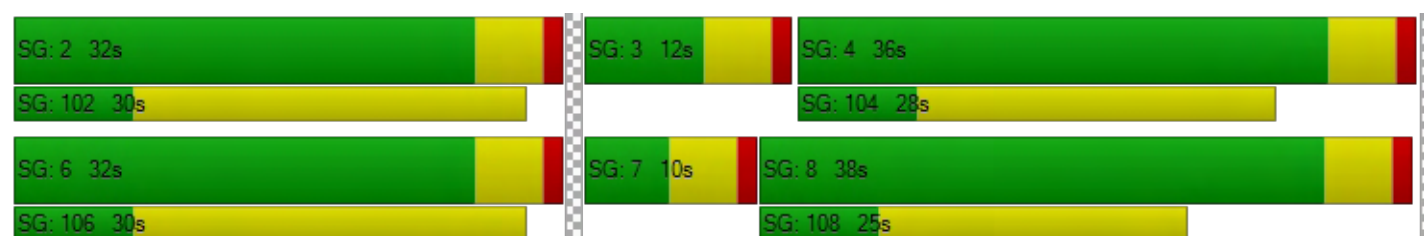
d_M, Delay for Movement [s/veh]	26.63	18.44	18.52	29.37	20.95	18.31	17.36	33.25	33.48	16.69	35.79	36.10
Movement LOS	C	B	B	C	C	B	B	C	C	B	D	D
d_A, Approach Delay [s/veh]	19.30			22.14			31.57			34.29		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	29.15											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.523			2.814			2.994			3.140		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			825			775		
d_b, Bicycle Delay [s]	17.56			17.56			13.81			15.01		
I_b,int, Bicycle LOS Score for Intersection	1.987			2.731			2.698			2.642		
Bicycle LOS	A			B			B			B		

Sequence

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



EXISTING PLUS PROJECT

Vistro File: G:\...\AM.vistro
Report File: G:\...\AMEp.pdf

Scenario 2 Existing Plus Project
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.529	24.3	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.336	49.1	E
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.489	12.2	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.697	36.9	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.393	16.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.587	25.9	C
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	NB Thru	0.000	10.0	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.017	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	24.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	10	6	0	35	0	0	0	33	22	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	513	84	170	602	93	65	347	99	119	427	160
Peak Hour Factor	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	140	23	47	165	25	18	95	27	33	117	44
Total Analysis Volume [veh/h]	58	561	92	186	659	102	71	380	108	130	467	175
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	4	40	40	51	42	42	24	14	14	24	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.60	0.49	0.49	0.28	0.17	0.17	0.28	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.19	0.20	0.21	0.06	0.13	0.13	0.11	0.13	0.11
s, saturation flow rate [veh/h]	1810	1900	1808	973	1900	1812	1196	1900	1758	1217	3618	1615
c, Capacity [veh/h]	81	889	846	614	939	896	354	317	293	355	643	287
d1, Uniform Delay [s]	40.13	14.62	14.63	8.47	13.69	13.69	23.33	34.05	34.12	24.26	33.04	32.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.28	1.21	1.28	0.27	1.35	1.42	0.28	4.52	5.17	0.63	1.59	2.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.38	0.38	0.30	0.41	0.41	0.20	0.79	0.81	0.37	0.73	0.61
d, Delay for Lane Group [s/veh]	51.41	15.84	15.92	8.74	15.05	15.11	23.60	38.57	39.29	24.89	34.63	34.37
Lane Group LOS	D	B	B	A	B	B	C	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.41	4.03	3.87	1.32	4.56	4.37	1.01	5.08	4.82	1.93	4.40	3.28
50th-Percentile Queue Length [ft/ln]	35.15	100.83	96.73	33.10	114.08	109.22	25.33	126.96	120.53	48.27	109.91	82.03
95th-Percentile Queue Length [veh/ln]	2.53	7.26	6.96	2.38	8.07	7.80	1.82	8.77	8.42	3.48	7.83	5.91
95th-Percentile Queue Length [ft/ln]	63.27	181.50	174.12	59.58	201.67	194.92	45.59	219.36	210.56	86.88	195.87	147.66

Movement, Approach, & Intersection Results

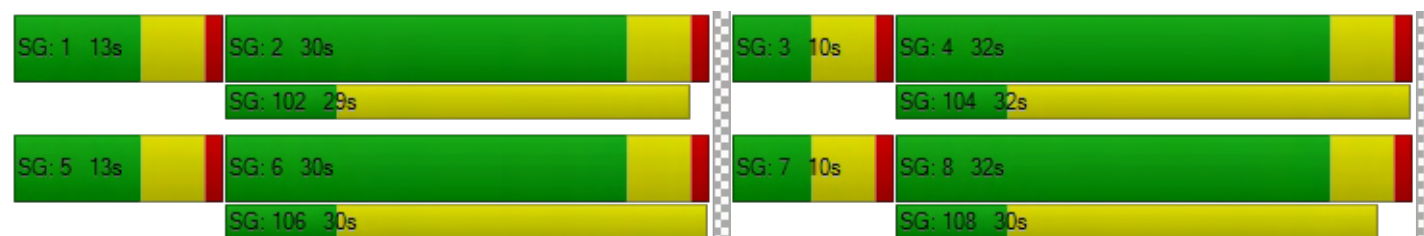
d_M, Delay for Movement [s/veh]	51.41	15.87	15.92	8.74	15.07	15.11	23.60	38.81	39.29	24.89	34.63	34.37
Movement LOS	D	B	B	A	B	B	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	18.77			13.83			36.97			32.93		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	24.27											
Intersection LOS	C											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.750			2.773			2.643			2.928		
Crosswalk LOS	B			C			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.146			2.341			2.021			2.197		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	49.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.336

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	0	0	90	28	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	629	674	91	33	32
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	181	194	26	9	9
Total Analysis Volume [veh/h]	110	723	775	105	38	37
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.01	0.01	0.00	0.34	0.06
d_M, Delay for Movement [s/veh]	10.40	0.00	0.00	0.00	49.06	23.59
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.49	0.00	0.00	0.00	1.78	1.78
95th-Percentile Queue Length [ft/ln]	12.30	0.00	0.00	0.00	44.45	44.45
d_A, Approach Delay [s/veh]	1.37		0.00		36.49	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.17					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.489

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	92	0	0	26	1	4	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	696	115	65	597	42	39	37	54	23	3	12
Peak Hour Factor	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	203	33	19	174	12	11	11	16	7	1	3
Total Analysis Volume [veh/h]	36	810	134	76	695	49	45	43	63	27	3	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	28	0	12	27	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	42	42	4	43	43	9	9	9
g / C, Green / Cycle	0.04	0.60	0.60	0.06	0.62	0.62	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.02	0.25	0.25	0.04	0.20	0.20	0.11	0.03	0.01
s, saturation flow rate [veh/h]	1810	1900	1807	1810	1900	1856	1395	1038	1615
c, Capacity [veh/h]	66	1135	1080	101	1172	1145	252	235	214
d1, Uniform Delay [s]	33.17	7.61	7.61	32.60	6.42	6.42	29.78	26.99	26.57
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.87	1.17	1.23	10.89	0.72	0.74	2.28	0.24	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.43	0.43	0.76	0.32	0.32	0.60	0.13	0.07
d, Delay for Lane Group [s/veh]	40.04	8.78	8.84	43.49	7.14	7.16	32.07	27.23	26.69
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	3.29	3.15	1.50	2.17	2.13	2.47	0.43	0.20
50th-Percentile Queue Length [ft/ln]	17.29	82.34	78.76	37.42	54.35	53.28	61.75	10.80	4.96
95th-Percentile Queue Length [veh/ln]	1.25	5.93	5.67	2.69	3.91	3.84	4.45	0.78	0.36
95th-Percentile Queue Length [ft/ln]	31.13	148.21	141.77	67.36	97.83	95.90	111.15	19.43	8.93

Movement, Approach, & Intersection Results

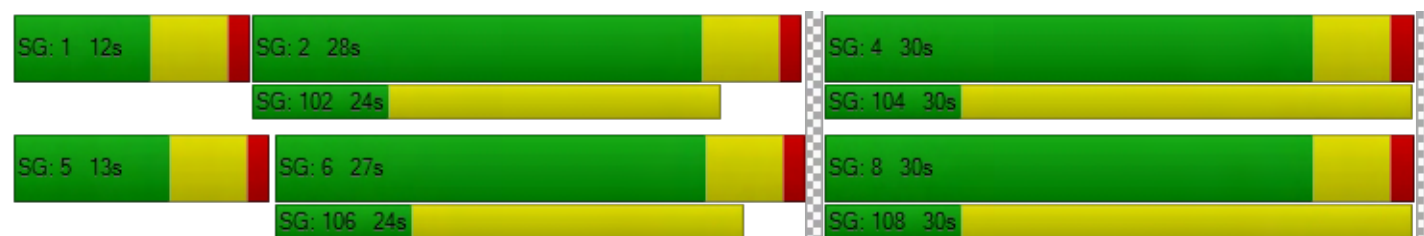
d_M, Delay for Movement [s/veh]	40.04	8.81	8.84	43.49	7.15	7.16	32.07	32.07	32.07	27.23	27.23	26.69
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	9.96			10.52			32.07			27.06		
Approach LOS	A			B			C			C		
d_I, Intersection Delay [s/veh]	12.24											
Intersection LOS	B											
Intersection V/C	0.489											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.860			2.869			1.856			2.055		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	657			629			714			714		
d_b, Bicycle Delay [s]	15.78			16.46			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.368			2.236			1.809			1.632		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	36.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.697

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	74	0	3	21	2	7	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	605	63	113	537	36	76	176	43	22	187	149
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	176	18	33	156	10	22	51	12	6	54	43
Total Analysis Volume [veh/h]	28	703	73	131	624	42	88	204	50	26	217	173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	30	0	15	30	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	41	41	10	48	48	23	17	17
g / C, Green / Cycle	0.03	0.37	0.37	0.09	0.43	0.43	0.21	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.21	0.07	0.18	0.18	0.19	0.13	0.11
s, saturation flow rate [veh/h]	1810	1900	1838	1810	1900	1858	1829	1890	1615
c, Capacity [veh/h]	49	705	682	160	821	803	380	286	244
d1, Uniform Delay [s]	52.92	27.50	27.51	49.31	21.57	21.57	42.50	45.52	44.43
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.93	3.19	3.31	9.70	1.51	1.55	7.83	7.01	3.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.56	0.56	0.82	0.41	0.41	0.90	0.85	0.71
d, Delay for Lane Group [s/veh]	62.85	30.69	30.81	59.01	23.08	23.12	50.34	52.54	48.19
Lane Group LOS	E	C	C	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.90	8.74	8.49	3.90	6.07	5.95	9.61	6.87	4.64
50th-Percentile Queue Length [ft/ln]	22.50	218.61	212.25	97.43	151.66	148.65	240.37	171.63	115.96
95th-Percentile Queue Length [veh/ln]	1.62	13.59	13.27	7.02	10.11	9.94	14.70	11.16	8.17
95th-Percentile Queue Length [ft/ln]	40.50	339.85	331.72	175.38	252.65	248.62	367.51	279.05	204.27

Movement, Approach, & Intersection Results

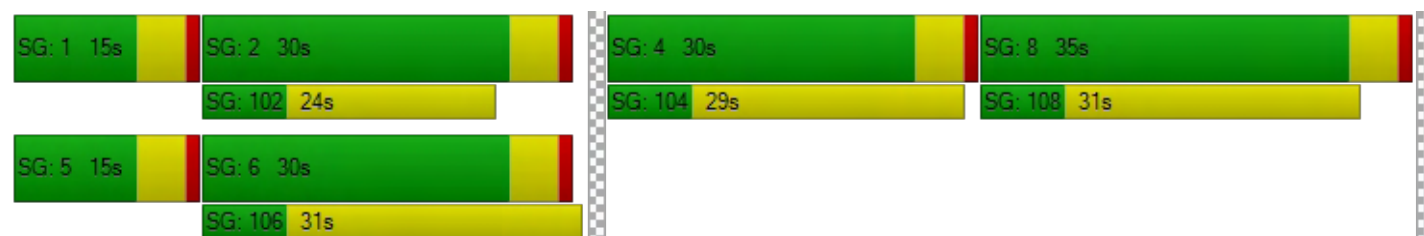
d_M, Delay for Movement [s/veh]	62.85	30.75	30.81	59.01	23.10	23.12	50.34	50.34	50.34	52.54	52.54	48.19
Movement LOS	E	C	C	E	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	31.87			29.00			50.34			50.73		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.91											
Intersection LOS	D											
Intersection V/C	0.697											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.707			2.844			2.133			2.307		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	455			455			545			455		
d_b, Bicycle Delay [s]	32.84			32.84			29.09			32.84		
I_b,int, Bicycle LOS Score for Intersection	2.223			2.217			2.124			2.246		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.393

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	66	0	1	19	1	4	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	554	17	53	516	66	75	101	48	12	46	34
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	162	5	15	151	19	22	29	14	4	13	10
Total Analysis Volume [veh/h]	22	647	20	62	603	77	88	118	56	14	54	40
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	29	0	10	29	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	45	45	4	47	47	16	10	16	7	7
g / C, Green / Cycle	0.03	0.56	0.56	0.05	0.58	0.58	0.20	0.12	0.20	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.01	0.18	0.18	0.03	0.17	0.05	0.06	0.10	0.01	0.03	0.02
s, saturation flow rate [veh/h]	1810	1900	1880	1810	3618	1615	1575	1798	1387	1900	1615
c, Capacity [veh/h]	47	1063	1051	87	2104	939	427	224	309	162	138
d1, Uniform Delay [s]	38.54	9.46	9.46	37.62	8.42	7.37	26.64	34.02	25.85	34.55	34.42
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.18	0.78	0.79	10.06	0.34	0.17	0.24	5.66	0.06	1.19	1.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.32	0.32	0.71	0.29	0.08	0.21	0.78	0.05	0.33	0.29
d, Delay for Lane Group [s/veh]	45.72	10.24	10.25	47.69	8.77	7.54	26.88	39.68	25.91	35.74	35.57
Lane Group LOS	D	B	B	D	A	A	C	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.50	2.85	2.82	1.39	2.24	0.52	1.40	3.55	0.21	1.03	0.76
50th-Percentile Queue Length [ft/ln]	12.55	71.13	70.52	34.77	56.12	13.10	34.99	88.82	5.36	25.65	19.04
95th-Percentile Queue Length [veh/ln]	0.90	5.12	5.08	2.50	4.04	0.94	2.52	6.39	0.39	1.85	1.37
95th-Percentile Queue Length [ft/ln]	22.59	128.04	126.94	62.59	101.01	23.57	62.99	159.87	9.65	46.17	34.27

Movement, Approach, & Intersection Results

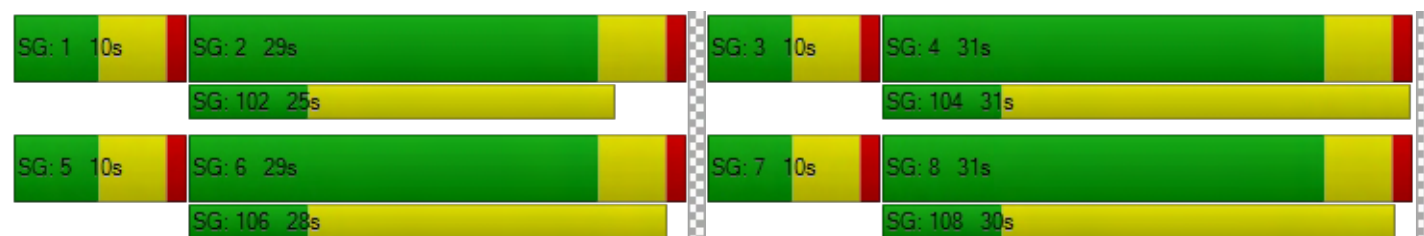
d_M, Delay for Movement [s/veh]	45.72	10.25	10.25	47.69	8.77	7.54	26.88	39.68	39.68	25.91	35.74	35.57
Movement LOS	D	B	B	D	A	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.38			11.89			35.38			34.40		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	16.46											
Intersection LOS	B											
Intersection V/C	0.393											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.744			2.883			2.068			2.200		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			650			650		
d_b, Bicycle Delay [s]	19.60			19.60			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.128			2.172			1.992			1.738		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	0	3	10	6	21	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	387	62	100	292	90	110	694	34	44	769	56
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	111	18	29	84	26	32	199	10	13	221	16
Total Analysis Volume [veh/h]	41	445	71	115	336	103	126	798	39	51	884	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	35	35	35	35	35	35	7	27	27	3	23	23
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.43	0.09	0.33	0.33	0.04	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.14	0.13	0.18	0.06	0.07	0.22	0.22	0.03	0.25	0.25
s, saturation flow rate [veh/h]	1061	1900	1810	899	1900	1615	1810	1900	1869	1810	1900	1855
c, Capacity [veh/h]	395	825	786	375	825	701	162	636	626	79	549	536
d1, Uniform Delay [s]	21.14	14.88	14.90	21.39	15.57	13.69	35.68	22.79	22.79	37.68	27.09	27.09
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.19	0.19
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	1.02	1.08	2.10	1.49	0.44	7.79	1.20	1.22	8.41	7.45	7.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.32	0.32	0.31	0.41	0.15	0.78	0.66	0.66	0.64	0.87	0.87
d, Delay for Lane Group [s/veh]	21.67	15.90	15.98	23.49	17.06	14.13	43.47	23.98	24.00	46.08	34.54	34.70
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.59	3.05	2.95	1.78	4.11	1.10	2.67	6.55	6.44	1.14	9.29	9.09
50th-Percentile Queue Length [ft/ln]	14.77	76.32	73.74	44.47	102.74	27.54	66.81	163.68	161.09	28.46	232.15	227.29
95th-Percentile Queue Length [veh/ln]	1.06	5.49	5.31	3.20	7.40	1.98	4.81	10.74	10.61	2.05	14.28	14.04
95th-Percentile Queue Length [ft/ln]	26.58	137.37	132.74	80.05	184.94	49.57	120.27	268.59	265.17	51.23	357.09	350.92

Movement, Approach, & Intersection Results

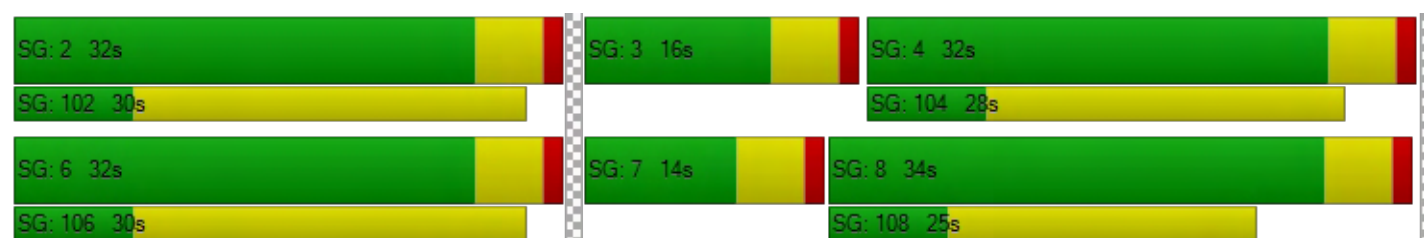
d_M, Delay for Movement [s/veh]	21.67	15.93	15.98	23.49	17.06	14.13	43.47	23.99	24.00	46.08	34.61	34.70
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.36			17.85			26.54			35.20		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	25.95											
Intersection LOS	C											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.444			2.704			2.804			2.908		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.019			2.474			2.354			2.384		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	43	0	0	0	0	0	0	0	148
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	43	0	0	0	10	0	0	1	148
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	0	0	3	0	0	0	40
Total Analysis Volume [veh/h]	0	0	0	47	0	0	0	11	0	0	1	161
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.02	9.97	8.35	9.24	9.71	8.88	7.52	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	4.14	4.14	4.14	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.11			9.24			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.97											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	43	148	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	0	0	53	149	38
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	14	40	10
Total Analysis Volume [veh/h]	13	0	0	58	162	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.87	9.25	7.61	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.32	1.32	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.87		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	A					

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S2A Modular Manufacturing

Scenario 2 Existing Plus Project
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.694	28.0	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.707	95.3	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.500	11.2	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	SB Left	0.776	42.5	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.414	16.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Right	0.670	31.4	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.8	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.062	9.8	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	28.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	25	19	0	11	0	0	0	12	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	118	596	185	214	647	93	110	498	96	131	498	145
Peak Hour Factor	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	168	52	60	183	26	31	141	27	37	141	41
Total Analysis Volume [veh/h]	133	673	209	242	730	105	124	562	108	148	562	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	30	0	12	30	0	11	32	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	7	34	34	46	34	34	29	18	18	29	19	19
g / C, Green / Cycle	0.08	0.40	0.40	0.54	0.40	0.40	0.35	0.22	0.22	0.35	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.07	0.24	0.24	0.27	0.22	0.22	0.11	0.18	0.18	0.13	0.16	0.10
s, saturation flow rate [veh/h]	1810	1900	1747	898	1900	1818	1147	1900	1795	1097	3618	1615
c, Capacity [veh/h]	151	749	689	482	749	717	399	411	388	370	790	353
d1, Uniform Delay [s]	38.65	20.61	20.61	13.24	20.15	20.16	20.60	31.97	31.98	21.44	30.81	28.97
k, delay calibration	0.11	0.50	0.50	0.26	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.18	3.73	4.05	1.95	3.13	3.27	0.44	4.60	4.91	0.70	1.20	0.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.61	0.61	0.50	0.57	0.57	0.31	0.84	0.84	0.40	0.71	0.46
d, Delay for Lane Group [s/veh]	53.83	24.34	24.66	15.19	23.28	23.43	21.04	36.57	36.88	22.14	32.01	29.92
Lane Group LOS	D	C	C	B	C	C	C	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.27	7.42	6.88	2.39	6.68	6.42	1.63	6.82	6.49	1.99	5.09	2.82
50th-Percentile Queue Length [ft/ln]	81.71	185.39	172.06	59.69	167.00	160.56	40.83	170.47	162.21	49.76	127.34	70.40
95th-Percentile Queue Length [veh/ln]	5.88	11.88	11.19	4.30	10.92	10.58	2.94	11.10	10.67	3.58	8.79	5.07
95th-Percentile Queue Length [ft/ln]	147.08	297.03	279.63	107.45	272.97	264.46	73.50	277.53	266.64	89.57	219.87	126.71

Movement, Approach, & Intersection Results

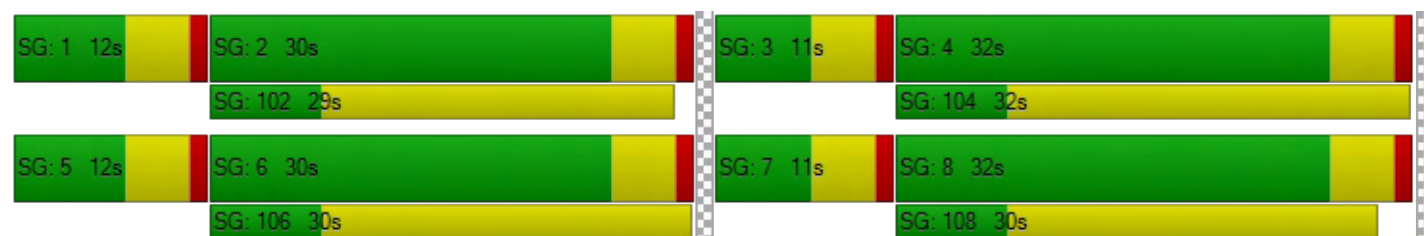
d_M, Delay for Movement [s/veh]	53.83	24.44	24.66	15.19	23.34	23.43	21.04	36.69	36.88	22.14	32.01	29.92
Movement LOS	D	C	C	B	C	C	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	28.34			21.52			34.27			29.95		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.01											
Intersection LOS	C											
Intersection V/C	0.694											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.867			2.869			2.763			3.054		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.397			2.448			2.215			2.281		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	95.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	0	32	72	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	818	807	38	77	84
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	223	220	10	21	23
Total Analysis Volume [veh/h]	44	894	882	42	84	92
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.01	0.00	0.71	0.17
d_M, Delay for Movement [s/veh]	10.12	0.00	0.00	0.00	95.31	71.54
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh/ln]	0.19	0.00	0.00	0.00	6.68	6.68
95th-Percentile Queue Length [ft/ln]	4.68	0.00	0.00	0.00	167.11	167.11
d_A, Approach Delay [s/veh]	0.47		0.00		82.88	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	7.38					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.500

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	0	0	75	4	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	775	23	14	839	48	47	0	49	43	27	26
Peak Hour Factor	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	221	7	4	239	14	13	0	14	12	8	7
Total Analysis Volume [veh/h]	57	883	26	16	956	55	54	0	56	49	31	30
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	30	0	10	28	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	44	44	1	42	42	9	9	9
g / C, Green / Cycle	0.05	0.63	0.63	0.02	0.61	0.61	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.24	0.01	0.27	0.27	0.11	0.05	0.02
s, saturation flow rate [veh/h]	1810	1900	1881	1810	1900	1864	966	1478	1615
c, Capacity [veh/h]	88	1206	1194	36	1151	1129	203	277	212
d1, Uniform Delay [s]	32.73	6.16	6.16	33.95	7.44	7.44	30.31	27.72	26.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.68	0.91	0.92	8.24	1.24	1.26	2.23	0.57	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.38	0.38	0.44	0.44	0.44	0.54	0.29	0.14
d, Delay for Lane Group [s/veh]	40.42	7.06	7.07	42.19	8.68	8.70	32.54	28.30	27.24
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	2.58	2.56	0.34	3.43	3.37	1.84	1.18	0.43
50th-Percentile Queue Length [ft/ln]	27.04	64.51	63.94	8.42	85.69	84.26	46.03	29.55	10.79
95th-Percentile Queue Length [veh/ln]	1.95	4.64	4.60	0.61	6.17	6.07	3.31	2.13	0.78
95th-Percentile Queue Length [ft/ln]	48.67	116.12	115.09	15.16	154.25	151.67	82.86	53.19	19.43

Movement, Approach, & Intersection Results

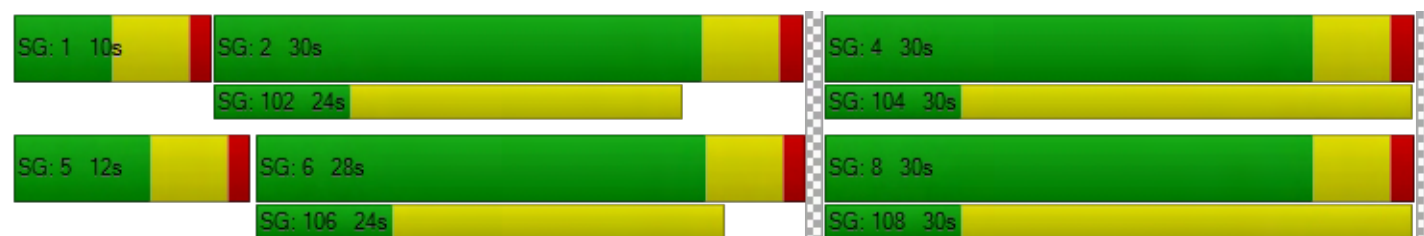
d_M, Delay for Movement [s/veh]	40.42	7.07	7.07	42.19	8.69	8.70	32.54	32.54	32.54	28.30	28.30	27.24
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	9.04			9.21			32.54			28.01		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	11.23											
Intersection LOS	B											
Intersection V/C	0.500											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.948			2.948			1.865			1.992		
Crosswalk LOS	C			C			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	714			657			714			714		
d_b, Bicycle Delay [s]	14.46			15.78			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.357			2.407			1.741			1.741		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 42.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.776

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	0	13	53	9	4	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	636	76	140	747	107	67	248	33	52	222	118
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	175	21	39	206	29	18	68	9	14	61	32
Total Analysis Volume [veh/h]	32	701	84	154	823	118	74	273	36	57	245	130
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	15	35	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	35	35	10	42	42	25	20	20
g / C, Green / Cycle	0.03	0.32	0.32	0.09	0.38	0.38	0.23	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.21	0.09	0.25	0.25	0.21	0.16	0.08
s, saturation flow rate [veh/h]	1810	1900	1830	1810	1900	1818	1851	1882	1615
c, Capacity [veh/h]	53	606	584	166	724	693	420	340	292
d1, Uniform Delay [s]	52.80	32.34	32.34	49.67	28.23	28.24	41.48	44.01	40.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.19	0.14	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.42	5.55	5.77	19.32	4.76	4.98	12.47	9.52	1.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.66	0.66	0.93	0.66	0.66	0.91	0.89	0.45
d, Delay for Lane Group [s/veh]	63.23	37.89	38.12	68.99	32.99	33.21	53.95	53.52	41.24
Lane Group LOS	E	D	D	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.03	10.00	9.68	5.00	10.97	10.54	11.26	8.71	3.16
50th-Percentile Queue Length [ft/ln]	25.68	250.01	241.91	125.09	274.14	263.54	281.51	217.78	78.91
95th-Percentile Queue Length [veh/ln]	1.85	15.19	14.78	8.67	16.40	15.87	16.76	13.55	5.68
95th-Percentile Queue Length [ft/ln]	46.23	379.67	369.45	216.80	409.91	396.66	419.09	338.79	142.04

Movement, Approach, & Intersection Results

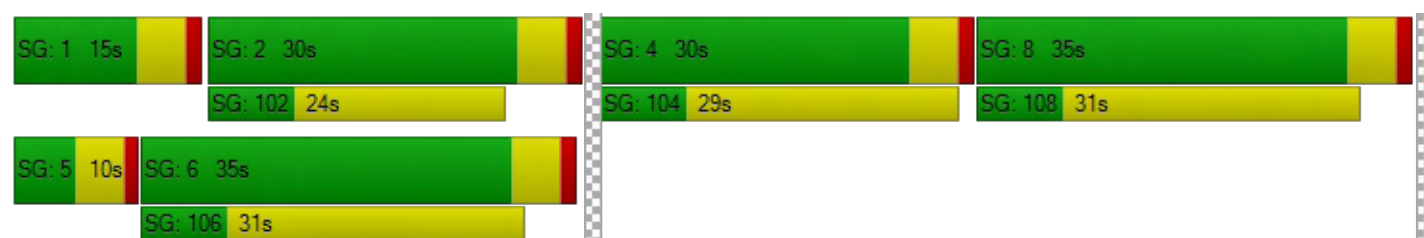
d_M, Delay for Movement [s/veh]	63.23	37.98	38.12	68.99	33.08	33.21	53.95	53.95	53.95	53.52	53.52	41.24
Movement LOS	E	D	D	E	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	38.99			38.15			53.95			49.83		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.47											
Intersection LOS	D											
Intersection V/C	0.776											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.744			2.896			2.230			2.358		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	455			545			545			455		
d_b, Bicycle Delay [s]	32.84			29.09			29.09			32.84		
I_b,int, Bicycle LOS Score for Intersection	2.234			2.463			2.192			2.272		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.414

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	0	4	45	4	2	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	640	7	44	700	75	85	100	62	5	74	36
Peak Hour Factor	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	169	2	12	185	20	22	26	16	1	20	10
Total Analysis Volume [veh/h]	50	677	7	47	740	79	90	106	66	5	78	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	14	28	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	3	46	46	3	46	46	16	10	16	6	6
g / C, Green / Cycle	0.04	0.58	0.58	0.04	0.58	0.58	0.19	0.12	0.19	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.03	0.20	0.05	0.06	0.10	0.00	0.04	0.02
s, saturation flow rate [veh/h]	1810	1900	1893	1810	3618	1615	1574	1780	1367	1900	1615
c, Capacity [veh/h]	79	1094	1090	76	2078	928	395	222	291	139	118
d1, Uniform Delay [s]	37.74	8.81	8.81	37.79	9.14	7.64	27.40	34.02	26.38	35.93	35.28
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.17	0.75	0.75	7.84	0.48	0.18	0.29	5.71	0.02	3.49	1.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.31	0.31	0.62	0.36	0.09	0.23	0.77	0.02	0.56	0.32
d, Delay for Lane Group [s/veh]	45.91	9.56	9.56	45.63	9.62	7.82	27.69	39.73	26.41	39.42	36.83
Lane Group LOS	D	A	A	D	A	A	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.10	2.76	2.75	1.03	2.97	0.55	1.46	3.51	0.08	1.58	0.74
50th-Percentile Queue Length [ft/ln]	27.56	69.02	68.81	25.86	74.30	13.81	36.45	87.87	1.93	39.49	18.55
95th-Percentile Queue Length [veh/ln]	1.98	4.97	4.95	1.86	5.35	0.99	2.62	6.33	0.14	2.84	1.34
95th-Percentile Queue Length [ft/ln]	49.61	124.23	123.85	46.55	133.74	24.87	65.61	158.17	3.48	71.08	33.38

Movement, Approach, & Intersection Results

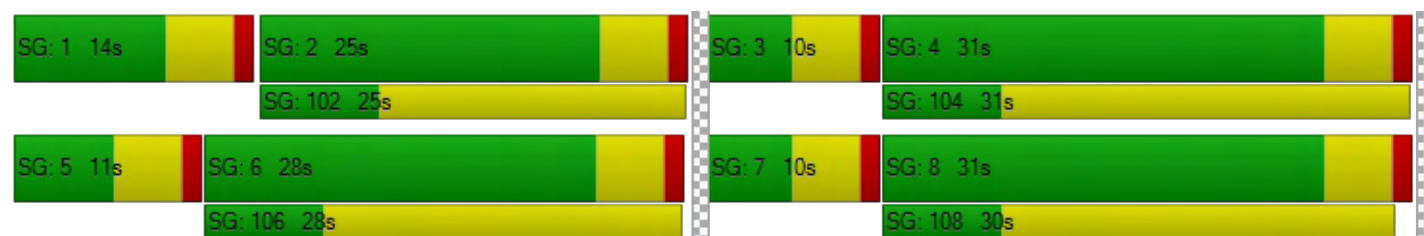
d_M, Delay for Movement [s/veh]	45.91	9.56	9.56	45.63	9.62	7.82	27.69	39.73	39.73	26.41	39.42	36.83
Movement LOS	D	A	A	D	A	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.04			11.41			35.59			38.07		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	16.46											
Intersection LOS	B											
Intersection V/C	0.414											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.782			2.910			2.086			2.193		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	500			575			650			650		
d_b, Bicycle Delay [s]	22.50			20.31			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.165			2.274			1.992			1.759		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report
Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	31.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	7	25	13	6	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	361	74	153	355	186	140	1070	58	95	1023	84
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	99	20	42	97	51	38	293	16	26	280	23
Total Analysis Volume [veh/h]	54	395	81	167	388	203	153	1170	63	104	1119	92
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	43	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	37	37	37	37	37	37	43	34	34	43	32	32
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.37	0.37	0.48	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.18	0.20	0.13	0.20	0.33	0.33	0.15	0.32	0.32
s, saturation flow rate [veh/h]	1011	1900	1790	933	1900	1615	759	1900	1866	700	1900	1850
c, Capacity [veh/h]	324	775	730	364	775	659	337	708	696	312	674	656
d1, Uniform Delay [s]	27.36	18.11	18.14	26.54	19.84	18.06	19.15	26.31	26.35	18.67	27.68	27.72
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.28	0.28	0.11	0.29	0.30
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	1.06	1.15	4.13	2.31	1.21	1.30	8.66	9.03	0.62	12.11	12.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.31	0.32	0.46	0.50	0.31	0.45	0.88	0.88	0.33	0.91	0.91
d, Delay for Lane Group [s/veh]	28.47	19.17	19.29	30.67	22.14	19.27	20.46	34.98	35.39	19.30	39.79	40.45
Lane Group LOS	C	B	B	C	C	B	C	C	D	B	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.99	3.43	3.30	3.28	6.09	2.89	1.77	13.29	13.18	1.14	14.02	13.82
50th-Percentile Queue Length [ft/ln]	24.78	85.87	82.38	81.93	152.22	72.13	44.28	332.29	329.51	28.57	350.59	345.55
95th-Percentile Queue Length [veh/ln]	1.78	6.18	5.93	5.90	10.14	5.19	3.19	19.27	19.13	2.06	20.17	19.92
95th-Percentile Queue Length [ft/ln]	44.61	154.56	148.28	147.47	253.39	129.83	79.70	481.76	478.36	51.42	504.13	497.98

Movement, Approach, & Intersection Results

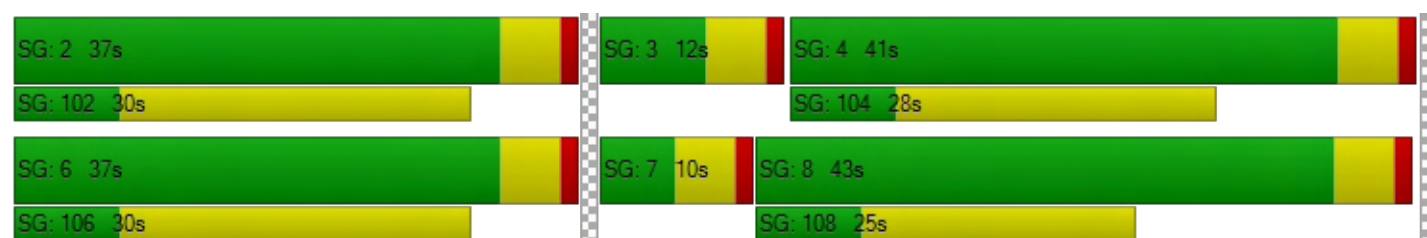
d_M, Delay for Movement [s/veh]	28.47	19.22	19.29	30.67	22.14	19.27	20.46	35.17	35.39	19.30	40.09	40.45
Movement LOS	C	B	B	C	C	B	C	D	D	B	D	D
d_A, Approach Delay [s/veh]	20.17			23.25			33.56			38.47		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.44											
Intersection LOS	C											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.542			2.838			3.005			3.159		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			844			800		
d_b, Bicycle Delay [s]	18.69			18.69			15.02			16.20		
I_b,int, Bicycle LOS Score for Intersection	1.997			2.810			2.703			2.644		
Bicycle LOS	A			C			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	106	0	0	0	0	0	0	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	106	0	0	0	10	0	0	10	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	29	0	0	0	3	0	0	3	13
Total Analysis Volume [veh/h]	0	0	0	115	0	0	0	11	0	0	11	52
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.76	9.39	8.35	9.27	9.76	8.97	7.32	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.41	0.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	10.20	10.20	10.20	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.83			9.27			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.64											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	106	48	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	0	0	116	58	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	0	0	32	16	5
Total Analysis Volume [veh/h]	49	0	0	126	63	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.84	8.92	7.36	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.93	4.93	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.84		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.85					
Intersection LOS	A					

OPENING YEAR (2021) PLUS PROJECT (EAGP)

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro

Scenario 8 Opening Year (Phase1) (EAGp)

Report File: G:\...\AMEAG1p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.522	24.4	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.151	33.2	D
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.484	12.4	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.707	37.7	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.392	16.7	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.594	26.1	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	NB Thru	0.000	9.4	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.010	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	24.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	5	4	0	15	0	0	0	15	10	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	528	85	177	605	97	68	361	84	111	444	166
Peak Hour Factor	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	144	23	48	165	27	19	99	23	30	121	45
Total Analysis Volume [veh/h]	53	578	93	194	662	106	74	395	92	121	486	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	4	40	40	51	42	42	24	14	14	24	15	15
g / C, Green / Cycle	0.04	0.47	0.47	0.60	0.50	0.50	0.28	0.17	0.17	0.28	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.20	0.21	0.21	0.06	0.13	0.13	0.10	0.13	0.11
s, saturation flow rate [veh/h]	1810	1900	1809	966	1900	1810	1188	1900	1778	1219	3618	1615
c, Capacity [veh/h]	77	887	844	609	945	900	346	315	295	355	636	284
d1, Uniform Delay [s]	40.17	14.77	14.78	8.54	13.57	13.57	23.51	34.11	34.17	24.19	33.39	32.58
k, delay calibration	0.11	0.50	0.50	0.12	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.20	1.28	1.35	0.34	1.35	1.42	0.30	4.55	5.11	0.56	1.95	2.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.39	0.39	0.32	0.42	0.42	0.21	0.79	0.80	0.34	0.76	0.64
d, Delay for Lane Group [s/veh]	50.37	16.05	16.13	8.87	14.92	14.99	23.82	38.66	39.27	24.75	35.34	34.99
Lane Group LOS	D	B	B	A	B	B	C	D	D	C	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.27	4.18	4.01	1.39	4.58	4.38	1.06	5.05	4.83	1.79	4.64	3.45
50th-Percentile Queue Length [ft/ln]	31.81	104.58	100.36	34.75	114.58	109.55	26.52	126.28	120.78	44.73	115.97	86.35
95th-Percentile Queue Length [veh/ln]	2.29	7.53	7.23	2.50	8.09	7.82	1.91	8.74	8.44	3.22	8.17	6.22
95th-Percentile Queue Length [ft/ln]	57.25	188.25	180.65	62.55	202.36	195.38	47.73	218.42	210.90	80.51	204.27	155.43

Movement, Approach, & Intersection Results

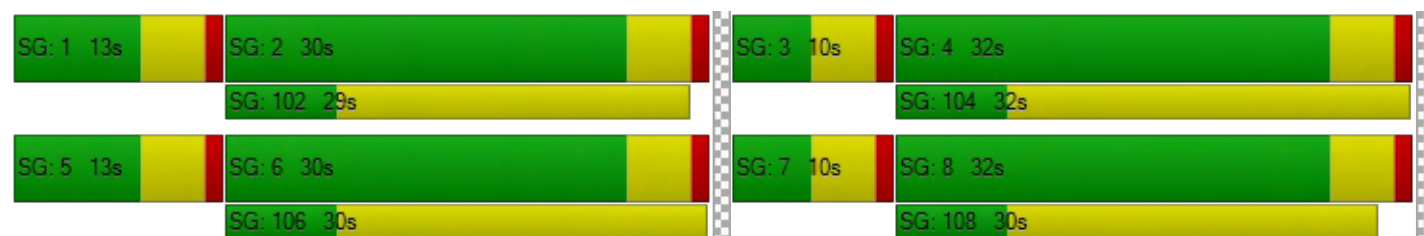
d_M, Delay for Movement [s/veh]	50.37	16.08	16.13	8.87	14.95	14.99	23.82	38.88	39.27	24.75	35.34	34.99
Movement LOS	D	B	B	A	B	B	C	D	D	C	D	C
d_A, Approach Delay [s/veh]	18.60			13.73			36.96			33.64		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	24.35											
Intersection LOS	C											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.745			2.784			2.649			2.944		
Crosswalk LOS	B			C			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.157			2.353			2.022			2.211		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	33.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.151

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	0	0	40	14	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	654	701	41	19	20
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	188	201	12	5	6
Total Analysis Volume [veh/h]	48	752	806	47	22	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.01	0.00	0.15	0.04
d_M, Delay for Movement [s/veh]	9.82	0.00	0.00	0.00	33.24	14.74
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.19	0.00	0.00	0.00	0.69	0.69
95th-Percentile Queue Length [ft/ln]	4.81	0.00	0.00	0.00	17.15	17.15
d_A, Approach Delay [s/veh]	0.59		0.00		23.78	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.91					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.484

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	40	0	0	14	1	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	668	120	68	608	44	38	38	56	24	3	12
Peak Hour Factor	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	194	35	20	177	13	11	11	16	7	1	3
Total Analysis Volume [veh/h]	37	778	140	79	708	51	44	44	65	28	3	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	28	0	12	27	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	42	42	4	43	43	9	9	9
g / C, Green / Cycle	0.04	0.59	0.59	0.06	0.61	0.61	0.13	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.02	0.25	0.25	0.04	0.20	0.20	0.11	0.03	0.01
s, saturation flow rate [veh/h]	1810	1900	1800	1810	1900	1855	1399	1021	1615
c, Capacity [veh/h]	67	1130	1071	103	1168	1141	254	235	216
d1, Uniform Delay [s]	33.14	7.64	7.64	32.57	6.52	6.52	29.72	26.95	26.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.87	1.13	1.20	11.24	0.75	0.77	2.30	0.25	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.42	0.42	0.77	0.33	0.33	0.60	0.13	0.06
d, Delay for Lane Group [s/veh]	40.01	8.78	8.84	43.80	7.27	7.29	32.02	27.20	26.61
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.71	3.21	3.06	1.56	2.25	2.20	2.50	0.45	0.20
50th-Percentile Queue Length [ft/ln]	17.74	80.29	76.55	39.03	56.27	55.12	62.54	11.16	4.95
95th-Percentile Queue Length [veh/ln]	1.28	5.78	5.51	2.81	4.05	3.97	4.50	0.80	0.36
95th-Percentile Queue Length [ft/ln]	31.93	144.52	137.79	70.26	101.28	99.22	112.57	20.08	8.91

Movement, Approach, & Intersection Results

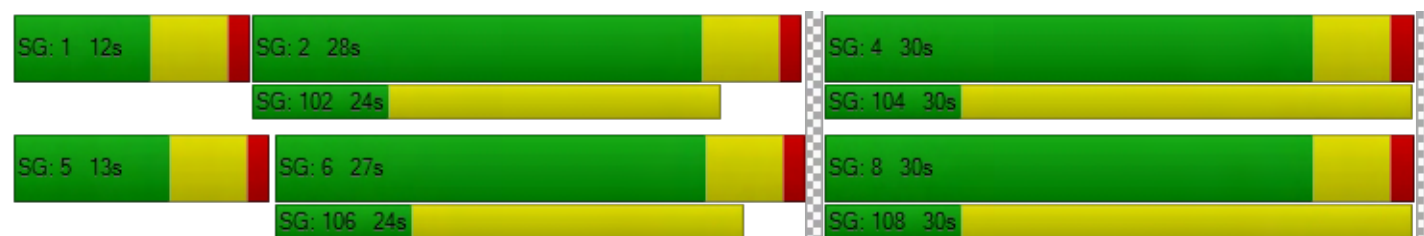
d_M, Delay for Movement [s/veh]	40.01	8.80	8.84	43.80	7.28	7.29	32.02	32.02	32.02	27.20	27.20	26.61
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	10.02			10.72			32.02			27.02		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	12.39											
Intersection LOS	B											
Intersection V/C	0.484											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.859			2.864			1.860			2.060		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	657			629			714			714		
d_b, Bicycle Delay [s]	15.78			16.46			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.347			2.251			1.812			1.634		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	37.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	32	0	2	11	1	3	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	584	66	116	548	36	75	183	45	23	195	149
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	170	19	34	159	10	22	53	13	7	57	43
Total Analysis Volume [veh/h]	29	679	77	135	637	42	87	213	52	27	227	173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	30	0	15	30	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	39	39	10	46	46	23	17	17
g / C, Green / Cycle	0.03	0.36	0.36	0.09	0.42	0.42	0.21	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.20	0.20	0.07	0.18	0.18	0.19	0.13	0.11
s, saturation flow rate [veh/h]	1810	1900	1833	1810	1900	1859	1830	1890	1615
c, Capacity [veh/h]	50	679	655	164	799	782	390	296	253
d1, Uniform Delay [s]	52.89	28.49	28.50	49.18	22.56	22.56	42.21	45.22	43.84
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.03	3.40	3.53	9.70	1.68	1.72	8.27	7.07	3.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.57	0.57	0.82	0.43	0.43	0.90	0.86	0.68
d, Delay for Lane Group [s/veh]	62.92	31.89	32.03	58.88	24.24	24.28	50.48	52.29	47.07
Lane Group LOS	E	C	C	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	8.71	8.44	4.01	6.38	6.25	9.93	7.17	4.58
50th-Percentile Queue Length [ft/ln]	23.29	217.65	210.90	100.32	159.48	156.35	248.25	179.25	114.43
95th-Percentile Queue Length [veh/ln]	1.68	13.55	13.20	7.22	10.52	10.36	15.10	11.56	8.09
95th-Percentile Queue Length [ft/ln]	41.92	338.63	329.98	180.57	263.04	258.88	377.44	289.03	202.14

Movement, Approach, & Intersection Results

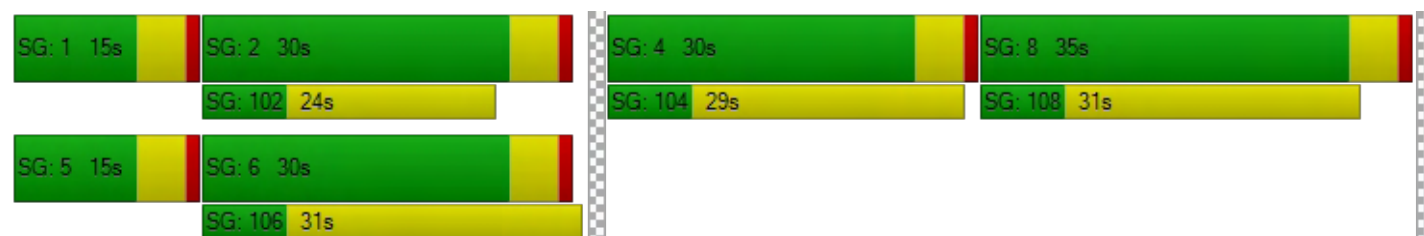
d_M, Delay for Movement [s/veh]	62.92	31.95	32.03	58.88	24.26	24.28	50.48	50.48	50.48	52.29	52.29	47.07
Movement LOS	E	C	C	E	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	33.10			30.00			50.48			50.18		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	37.68											
Intersection LOS	D											
Intersection V/C	0.707											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.706			2.842			2.147			2.319		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	455			455			545			455		
d_b, Bicycle Delay [s]	32.84			32.84			29.09			32.84		
I_b,int, Bicycle LOS Score for Intersection	2.207			2.231			2.140			2.264		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report

Intersection 5: State Street / Devonshire Avenue

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.392

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	28	0	1	9	1	2	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	536	18	55	526	69	76	105	50	12	48	33
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	157	5	16	154	20	22	31	15	4	14	10
Total Analysis Volume [veh/h]	23	626	21	64	614	81	89	123	58	14	56	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	29	0	10	29	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	Yes		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	45	45	4	46	46	17	10	17	7	7
g / C, Green / Cycle	0.03	0.56	0.56	0.05	0.58	0.58	0.21	0.13	0.21	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.01	0.17	0.17	0.04	0.17	0.05	0.06	0.10	0.01	0.03	0.02
s, saturation flow rate [veh/h]	1810	1900	1878	1810	3618	1615	1570	1798	1378	1900	1615
c, Capacity [veh/h]	48	1053	1041	89	2086	931	432	232	309	169	144
d1, Uniform Delay [s]	38.49	9.61	9.62	37.61	8.66	7.57	26.37	33.84	25.61	34.30	34.11
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.11	0.76	0.77	10.48	0.36	0.18	0.23	5.62	0.06	1.13	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.31	0.31	0.72	0.29	0.09	0.21	0.78	0.05	0.33	0.27
d, Delay for Lane Group [s/veh]	45.61	10.38	10.39	48.09	9.02	7.75	26.61	39.46	25.67	35.43	35.11
Lane Group LOS	D	B	B	D	A	A	C	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.52	2.79	2.76	1.44	2.34	0.56	1.41	3.69	0.21	1.06	0.74
50th-Percentile Queue Length [ft/ln]	13.07	69.69	69.06	36.05	58.44	14.07	35.18	92.15	5.33	26.44	18.39
95th-Percentile Queue Length [veh/ln]	0.94	5.02	4.97	2.60	4.21	1.01	2.53	6.63	0.38	1.90	1.32
95th-Percentile Queue Length [ft/ln]	23.52	125.45	124.30	64.89	105.19	25.32	63.33	165.87	9.59	47.59	33.11

Movement, Approach, & Intersection Results

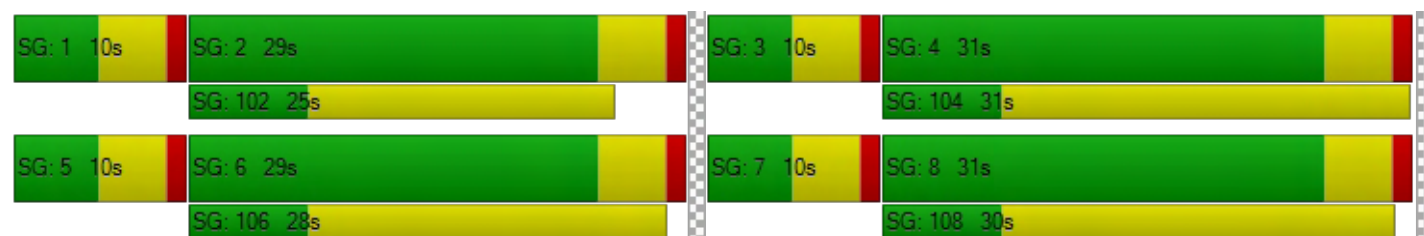
d_M, Delay for Movement [s/veh]	45.61	10.38	10.39	48.09	9.02	7.75	26.61	39.46	39.46	25.67	35.43	35.11
Movement LOS	D	B	B	D	A	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	11.59			12.18			35.22			34.06		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	16.72											
Intersection LOS	B											
Intersection V/C	0.392											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.743			2.883			2.073			2.202		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			650			650		
d_b, Bicycle Delay [s]	19.60			19.60			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.112			2.186			2.005			1.739		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.594

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	0	2	4	3	9	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	381	65	103	297	90	102	722	35	46	800	52
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	109	19	30	85	26	29	207	10	13	230	15
Total Analysis Volume [veh/h]	43	438	75	118	341	103	117	830	40	53	920	60
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	35	35	35	35	35	35	7	27	27	4	24	24
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.43	0.08	0.34	0.34	0.04	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.14	0.13	0.18	0.06	0.06	0.23	0.23	0.03	0.26	0.26
s, saturation flow rate [veh/h]	1056	1900	1805	901	1900	1615	1810	1900	1869	1810	1900	1859
c, Capacity [veh/h]	389	820	779	374	820	697	152	639	629	81	565	553
d1, Uniform Delay [s]	21.47	15.01	15.03	21.58	15.77	13.82	35.94	22.92	22.92	37.65	26.75	26.75
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.19	0.19
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	1.03	1.10	2.20	1.55	0.45	8.02	1.32	1.34	8.67	7.75	7.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.32	0.32	0.32	0.42	0.15	0.77	0.69	0.69	0.66	0.88	0.88
d, Delay for Lane Group [s/veh]	22.04	16.03	16.13	23.78	17.32	14.27	43.96	24.24	24.26	46.32	34.50	34.66
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.63	3.06	2.95	1.84	4.21	1.11	2.50	6.87	6.76	1.19	9.60	9.42
50th-Percentile Queue Length [ft/ln]	15.67	76.40	73.67	46.00	105.37	27.72	62.47	171.77	169.10	29.64	240.00	235.49
95th-Percentile Queue Length [veh/ln]	1.13	5.50	5.30	3.31	7.58	2.00	4.50	11.17	11.03	2.13	14.68	14.45
95th-Percentile Queue Length [ft/ln]	28.21	137.52	132.61	82.80	189.54	49.89	112.44	279.24	275.73	53.35	367.04	361.33

Movement, Approach, & Intersection Results

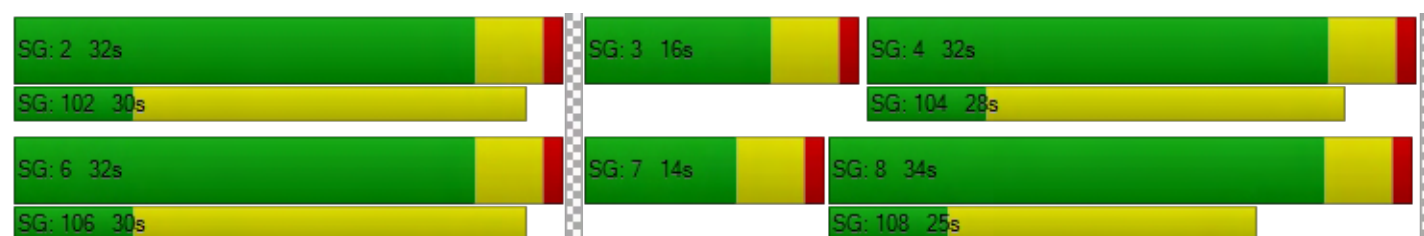
d_M, Delay for Movement [s/veh]	22.04	16.07	16.13	23.78	17.32	14.27	43.96	24.25	24.26	46.32	34.57	34.66
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.54			18.12			26.59			35.18		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	26.12											
Intersection LOS	C											
Intersection V/C	0.594											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.446			2.701			2.821			2.929		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.018			2.487			2.374			2.412		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	21	0	0	0	0	0	0	0	64
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	21	0	0	0	10	0	0	1	64
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	6	0	0	0	3	0	0	0	17
Total Analysis Volume [veh/h]	0	0	0	23	0	0	0	11	0	0	1	70
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.75	9.43	8.35	8.85	9.33	8.55	7.33	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1.84	1.84	1.84	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.84			8.85			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.94											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	21	64	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	0	0	31	65	18
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	0	8	18	5
Total Analysis Volume [veh/h]	9	0	0	34	71	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.10	8.70	7.37	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.77	0.77	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.10		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	A					

S2A Modular Manufacturing

Vistro File: G:\...\PM.vistro

Scenario 8 Opening Year (Phase1) (EAGp)

Report File: G:\...\PMEAG1p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.708	28.3	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.330	46.4	E
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.500	11.5	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.817	42.9	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.421	16.7	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Right	0.683	32.2	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.4	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.024	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	28.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	11	9	0	5	0	0	0	6	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	106	605	182	223	667	97	114	518	93	131	518	151
Peak Hour Factor	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	171	51	63	188	27	32	146	26	37	146	43
Total Analysis Volume [veh/h]	120	683	205	252	753	110	129	585	105	148	585	170
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	12	25	0	11	32	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	7	32	32	44	32	32	31	19	19	31	20	20
g / C, Green / Cycle	0.08	0.38	0.38	0.52	0.38	0.38	0.36	0.22	0.22	0.36	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.24	0.24	0.28	0.23	0.23	0.11	0.19	0.19	0.13	0.16	0.11
s, saturation flow rate [veh/h]	1810	1900	1751	903	1900	1816	1125	1900	1801	1098	3618	1615
c, Capacity [veh/h]	154	718	662	464	715	683	411	425	403	389	844	377
d1, Uniform Delay [s]	38.20	21.77	21.77	14.46	21.59	21.60	19.73	31.57	31.58	20.52	29.87	27.99
k, delay calibration	0.11	0.50	0.50	0.28	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.24	4.40	4.76	2.55	3.96	4.15	0.43	4.33	4.59	0.61	1.03	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.64	0.64	0.54	0.62	0.62	0.31	0.83	0.83	0.38	0.69	0.45
d, Delay for Lane Group [s/veh]	46.44	26.17	26.54	17.01	25.55	25.75	20.16	35.90	36.17	21.13	30.90	28.83
Lane Group LOS	D	C	C	B	C	C	C	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.71	7.80	7.25	2.67	7.32	7.04	1.65	6.95	6.63	1.92	5.21	2.86
50th-Percentile Queue Length [ft/ln]	67.64	194.93	181.36	66.70	182.94	175.97	41.27	173.81	165.69	48.11	130.14	71.43
95th-Percentile Queue Length [veh/ln]	4.87	12.38	11.67	4.80	11.75	11.39	2.97	11.28	10.85	3.46	8.95	5.14
95th-Percentile Queue Length [ft/ln]	121.75	309.41	291.79	120.06	293.84	284.75	74.28	281.92	271.25	86.59	223.68	128.57

Movement, Approach, & Intersection Results

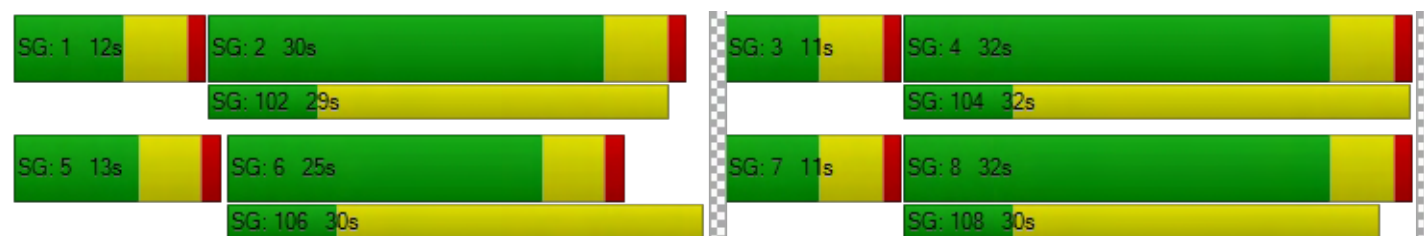
d_M, Delay for Movement [s/veh]	46.44	26.29	26.54	17.01	25.63	25.75	20.16	36.01	36.17	21.13	30.90	28.83
Movement LOS	D	C	C	B	C	C	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	28.74			23.70			33.53			28.91		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	28.34											
Intersection LOS	C											
Intersection V/C	0.708											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.872			2.889			2.774			3.068		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			471			635			635		
d_b, Bicycle Delay [s]	21.18			24.85			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.391			2.479			2.235			2.305		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	46.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.330

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	0	0	15	32	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	851	840	21	37	41
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	232	229	6	10	11
Total Analysis Volume [veh/h]	24	930	918	23	40	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.33	0.08
d_M, Delay for Movement [s/veh]	10.05	0.00	0.00	0.00	46.39	23.33
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.00	1.87	1.87
95th-Percentile Queue Length [ft/ln]	2.52	0.00	0.00	0.00	46.81	46.81
d_A, Approach Delay [s/veh]	0.25		0.00		34.18	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.59					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.500

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	17	0	0	34	2	1	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	788	24	15	829	48	48	0	51	45	28	27
Peak Hour Factor	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	224	7	4	236	14	14	0	15	13	8	8
Total Analysis Volume [veh/h]	59	898	27	17	944	55	55	0	58	51	32	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	30	0	10	26	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	44	44	1	42	42	10	10	10
g / C, Green / Cycle	0.05	0.63	0.63	0.02	0.60	0.60	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.24	0.01	0.27	0.27	0.12	0.06	0.02
s, saturation flow rate [veh/h]	1810	1900	1881	1810	1900	1863	969	1458	1615
c, Capacity [veh/h]	90	1196	1184	38	1142	1120	208	280	219
d1, Uniform Delay [s]	32.71	6.36	6.36	33.90	7.59	7.59	30.12	27.53	26.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.89	0.95	0.96	8.01	1.24	1.27	2.22	0.58	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.66	0.39	0.39	0.45	0.44	0.44	0.54	0.30	0.14
d, Delay for Lane Group [s/veh]	40.59	7.32	7.33	41.91	8.83	8.86	32.33	28.12	27.00
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.12	2.71	2.68	0.35	3.44	3.38	1.89	1.22	0.44
50th-Percentile Queue Length [ft/ln]	28.03	67.67	67.06	8.86	86.06	84.60	47.17	30.56	11.08
95th-Percentile Queue Length [veh/ln]	2.02	4.87	4.83	0.64	6.20	6.09	3.40	2.20	0.80
95th-Percentile Queue Length [ft/ln]	50.46	121.81	120.71	15.94	154.91	152.28	84.91	55.01	19.95

Movement, Approach, & Intersection Results

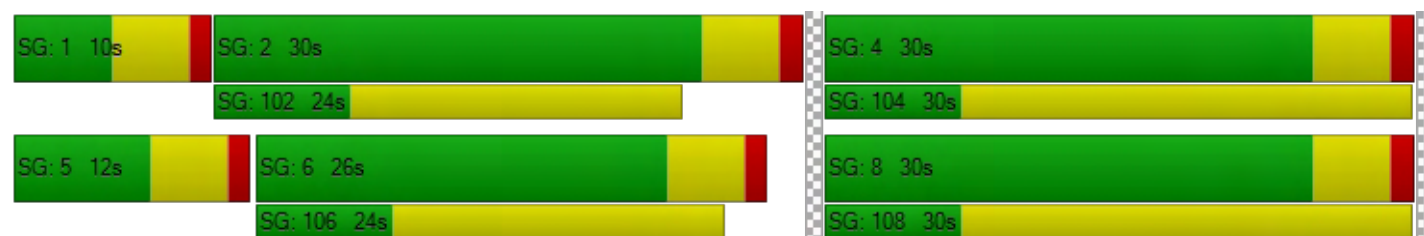
d_M, Delay for Movement [s/veh]	40.59	7.32	7.33	41.91	8.85	8.86	32.33	32.33	32.33	28.12	28.12	27.00
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	9.32			9.40			32.33			27.81		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	11.47											
Intersection LOS	B											
Intersection V/C	0.500											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.953			2.951			1.869			1.995		
Crosswalk LOS	C			C			A			A		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	714			600			714			714		
d_b, Bicycle Delay [s]	14.46			17.15			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.371			2.398			1.746			1.748		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	42.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.817

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	6	24	4	2	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	649	79	138	746	106	68	258	34	54	231	120
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	179	22	38	205	29	19	71	9	15	64	33
Total Analysis Volume [veh/h]	33	715	87	152	822	117	75	284	37	59	254	132
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	27	0	16	33	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	25	25	10	31	31	23	18	18
g / C, Green / Cycle	0.03	0.26	0.26	0.10	0.33	0.33	0.24	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.22	0.08	0.25	0.25	0.21	0.17	0.08
s, saturation flow rate [veh/h]	1810	1900	1829	1810	1900	1818	1852	1882	1615
c, Capacity [veh/h]	57	491	473	186	627	600	440	359	308
d1, Uniform Delay [s]	45.45	33.29	33.30	41.81	28.56	28.57	35.13	37.35	33.91
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.12	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.17	15.07	15.62	8.59	8.66	9.04	7.32	6.62	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.83	0.83	0.82	0.77	0.77	0.90	0.87	0.43
d, Delay for Lane Group [s/veh]	54.61	48.36	48.92	50.40	37.22	37.60	42.45	43.96	34.85
Lane Group LOS	D	D	D	D	D	D	D	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.91	10.73	10.41	3.82	10.70	10.31	9.35	7.43	2.67
50th-Percentile Queue Length [ft/ln]	22.68	268.29	260.23	95.55	267.59	257.86	233.86	185.77	66.83
95th-Percentile Queue Length [veh/ln]	1.63	16.10	15.70	6.88	16.07	15.58	14.37	11.90	4.81
95th-Percentile Queue Length [ft/ln]	40.82	402.60	392.51	171.99	401.73	389.53	359.26	297.54	120.30

Movement, Approach, & Intersection Results

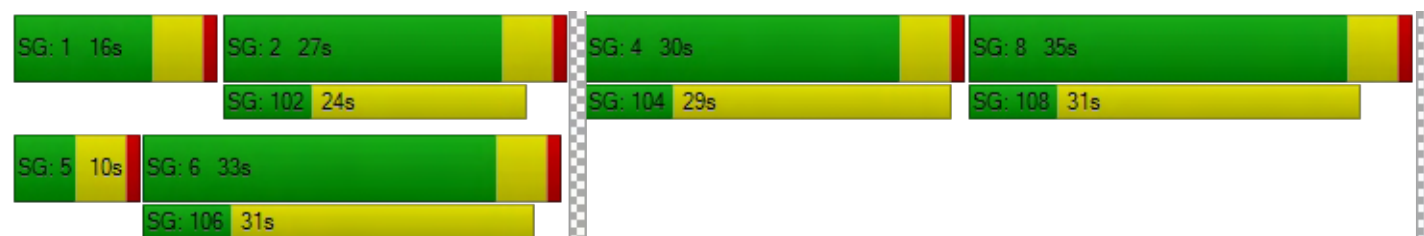
d_M, Delay for Movement [s/veh]	54.61	48.60	48.92	50.40	37.38	37.60	42.45	42.45	42.45	43.96	43.96	34.85
Movement LOS	D	D	D	D	D	D	D	D	D	D	D	C
d_A, Approach Delay [s/veh]	48.87			39.22			42.45			41.26		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.92											
Intersection LOS	D											
Intersection V/C	0.817											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	37.14			37.14			37.14			37.14		
I_p,int, Pedestrian LOS Score for Intersection	2.740			2.891			2.237			2.362		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	463			589			632			526		
d_b, Bicycle Delay [s]	28.05			23.63			22.24			25.79		
I_b,int, Bicycle LOS Score for Intersection	2.248			2.460			2.213			2.294		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report

Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.421

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	2	20	2	1	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	655	7	44	701	76	87	104	65	5	77	36
Peak Hour Factor	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	173	2	12	185	20	23	27	17	1	20	10
Total Analysis Volume [veh/h]	52	693	7	47	741	80	92	110	69	5	81	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	27	0	16	27	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	3	46	46	3	46	46	16	10	16	6	6
g / C, Green / Cycle	0.04	0.57	0.57	0.04	0.57	0.57	0.20	0.13	0.20	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.03	0.20	0.05	0.06	0.10	0.00	0.04	0.02
s, saturation flow rate [veh/h]	1810	1900	1893	1810	3618	1615	1570	1779	1358	1900	1615
c, Capacity [veh/h]	80	1085	1082	76	2058	919	399	230	291	146	124
d1, Uniform Delay [s]	37.72	9.04	9.04	37.79	9.37	7.84	27.13	33.82	26.12	35.73	35.03
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.41	0.79	0.79	7.84	0.49	0.19	0.29	5.64	0.02	3.30	1.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.65	0.32	0.32	0.62	0.36	0.09	0.23	0.78	0.02	0.56	0.31
d, Delay for Lane Group [s/veh]	46.13	9.83	9.83	45.63	9.86	8.03	27.42	39.46	26.15	39.03	36.42
Lane Group LOS	D	A	A	D	A	A	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.15	2.89	2.88	1.03	3.03	0.57	1.48	3.65	0.08	1.63	0.74
50th-Percentile Queue Length [ft/ln]	28.72	72.16	71.94	25.86	75.86	14.26	37.06	91.16	1.92	40.74	18.40
95th-Percentile Queue Length [veh/ln]	2.07	5.20	5.18	1.86	5.46	1.03	2.67	6.56	0.14	2.93	1.32
95th-Percentile Queue Length [ft/ln]	51.69	129.88	129.49	46.55	136.55	25.67	66.71	164.09	3.46	73.33	33.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.13	9.83	9.83	45.63	9.86	8.03	27.42	39.46	39.46	26.15	39.03	36.42
Movement LOS	D	A	A	D	A	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.34			11.63			35.38			37.71		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	16.69											
Intersection LOS	B											
Intersection V/C	0.421											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.787			2.915			2.091			2.195		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	550			550			650			650		
d_b, Bicycle Delay [s]	21.03			21.03			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.180			2.276			2.007			1.764		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	32.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.683

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	3	11	6	3	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	369	77	155	354	186	142	1113	60	99	1064	86
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	101	21	42	97	51	39	304	16	27	291	24
Total Analysis Volume [veh/h]	56	404	84	170	387	203	155	1217	66	108	1164	94
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	43	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	36	36	36	36	36	36	44	35	35	44	33	33
g / C, Green / Cycle	0.40	0.40	0.40	0.40	0.40	0.40	0.49	0.38	0.38	0.49	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.13	0.18	0.20	0.13	0.21	0.34	0.34	0.16	0.33	0.34
s, saturation flow rate [veh/h]	1012	1900	1789	922	1900	1615	734	1900	1866	677	1900	1851
c, Capacity [veh/h]	310	755	710	346	755	642	334	729	716	310	696	678
d1, Uniform Delay [s]	28.47	18.83	18.87	27.97	20.54	18.71	19.03	25.92	25.97	18.68	27.18	27.24
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.17	0.30	0.30	0.11	0.31	0.32
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.28	1.18	1.27	4.93	2.48	1.29	1.55	9.68	10.17	0.67	12.90	13.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.33	0.34	0.49	0.51	0.32	0.46	0.89	0.89	0.35	0.91	0.92
d, Delay for Lane Group [s/veh]	29.75	20.01	20.14	32.91	23.02	20.00	20.58	35.60	36.14	19.35	40.08	40.91
Lane Group LOS	C	C	C	C	C	C	C	D	D	B	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.06	3.62	3.47	3.49	6.22	2.96	1.77	13.99	13.91	1.16	14.65	14.49
50th-Percentile Queue Length [ft/ln]	26.45	90.61	86.82	87.21	155.58	73.88	44.28	349.79	347.79	29.00	366.32	362.32
95th-Percentile Queue Length [veh/ln]	1.90	6.52	6.25	6.28	10.31	5.32	3.19	20.13	20.03	2.09	20.93	20.74
95th-Percentile Queue Length [ft/ln]	47.60	163.10	156.28	156.98	257.86	132.98	79.70	503.15	500.72	52.21	523.27	518.41

Movement, Approach, & Intersection Results

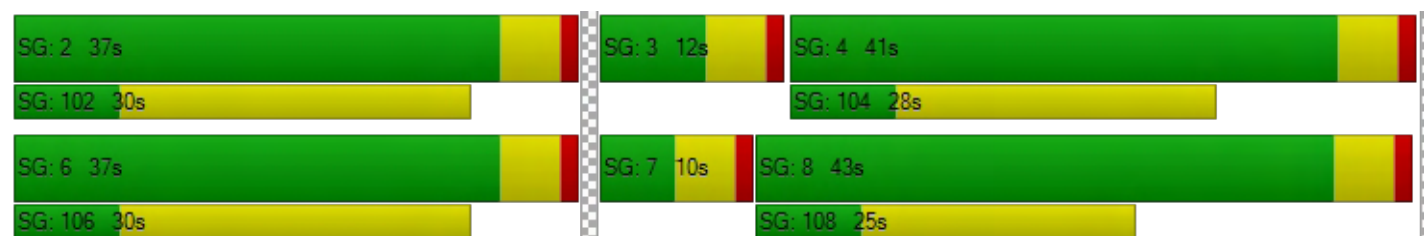
d_M, Delay for Movement [s/veh]	29.75	20.06	20.14	32.91	23.02	20.00	20.58	35.85	36.14	19.35	40.46	40.91
Movement LOS	C	C	C	C	C	C	C	D	D	B	D	D
d_A, Approach Delay [s/veh]	21.07			24.43			34.22			38.82		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	32.20											
Intersection LOS	C											
Intersection V/C	0.683											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.552			2.844			3.030			3.187		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			844			800		
d_b, Bicycle Delay [s]	18.69			18.69			15.02			16.20		
I_b,int, Bicycle LOS Score for Intersection	2.008			2.814			2.746			2.687		
Bicycle LOS	B			C			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	48	0	0	0	0	0	0	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	48	0	0	0	10	0	0	10	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	13	0	0	0	3	0	0	3	6
Total Analysis Volume [veh/h]	0	0	0	52	0	0	0	11	0	0	11	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.68	9.24	8.35	8.89	9.38	8.61	7.27	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	4.21	4.21	4.21	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.76			8.89			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.67											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	0	0	48	23	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	0	58	33	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	0	16	9	3
Total Analysis Volume [veh/h]	22	0	0	63	36	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.11	8.58	7.29	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.88	1.88	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.11		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.52					
Intersection LOS	A					

OPENING YEAR (2021) PLUS PROJECT PLUS CUMULATIVE (EAGPC)

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro

Scenario 7 Opening Year (Phase1) with Project

Report File: G:\...\AMOY1p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.586	25.2	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.197	43.1	E
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.550	13.9	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.811	49.2	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.447	17.0	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.714	28.9	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	NB Thru	0.000	9.4	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.010	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	71	27	18	75	5	6	15	32	30	14	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	594	108	195	665	102	74	376	101	131	458	183
Peak Hour Factor	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	162	30	53	182	28	20	103	28	36	125	50
Total Analysis Volume [veh/h]	78	650	118	213	728	112	81	411	111	143	501	200
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	5	38	38	50	40	40	25	15	15	25	16	16
g / C, Green / Cycle	0.06	0.45	0.45	0.59	0.47	0.47	0.29	0.18	0.18	0.29	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.21	0.21	0.23	0.23	0.23	0.07	0.14	0.14	0.12	0.14	0.12
s, saturation flow rate [veh/h]	1810	1900	1800	927	1900	1813	1174	1900	1763	1188	3618	1615
c, Capacity [veh/h]	103	854	809	566	898	857	353	335	311	354	668	298
d1, Uniform Delay [s]	39.57	16.28	16.29	9.54	15.29	15.29	22.98	33.64	33.70	23.96	32.83	32.28
k, delay calibration	0.11	0.50	0.50	0.18	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.94	1.80	1.90	0.69	1.82	1.91	0.33	4.54	5.12	0.74	1.72	2.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.46	0.46	0.38	0.48	0.48	0.23	0.80	0.81	0.40	0.75	0.67
d, Delay for Lane Group [s/veh]	50.51	18.08	18.18	10.23	17.11	17.20	23.31	38.18	38.82	24.70	34.54	34.88
Lane Group LOS	D	B	B	B	B	B	C	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.86	5.23	4.98	1.65	5.51	5.28	1.14	5.41	5.13	2.11	4.72	3.80
50th-Percentile Queue Length [ft/ln]	46.43	130.64	124.45	41.25	137.77	132.01	28.61	135.34	128.28	52.75	118.11	94.99
95th-Percentile Queue Length [veh/ln]	3.34	8.97	8.64	2.97	9.36	9.05	2.06	9.23	8.85	3.80	8.29	6.84
95th-Percentile Queue Length [ft/ln]	83.57	224.36	215.93	74.24	234.01	226.22	51.50	230.74	221.15	94.94	207.23	170.99

Movement, Approach, & Intersection Results

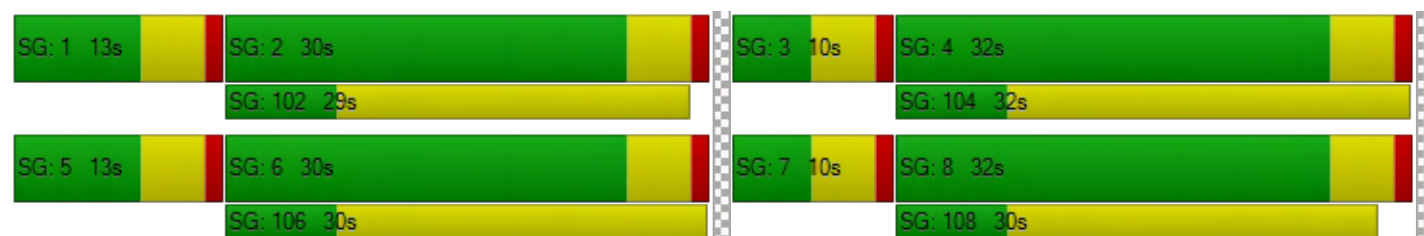
d_M, Delay for Movement [s/veh]	50.51	18.12	18.18	10.23	17.15	17.20	23.31	38.40	38.82	24.70	34.54	34.88
Movement LOS	D	B	B	B	B	B	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	21.12			15.76			36.45			32.96		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	25.18											
Intersection LOS	C											
Intersection V/C	0.586											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.812			2.836			2.675			2.980		
Crosswalk LOS	C			C			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.258			2.428			2.057			2.256		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	43.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.197

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	111	94	40	14	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	765	795	41	19	20
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	220	228	12	5	6
Total Analysis Volume [veh/h]	48	879	914	47	22	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.01	0.00	0.20	0.04
d_M, Delay for Movement [s/veh]	10.32	0.00	0.00	0.00	43.12	17.64
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.21	0.00	0.00	0.00	0.90	0.90
95th-Percentile Queue Length [ft/ln]	5.31	0.00	0.00	0.00	22.49	22.49
d_A, Approach Delay [s/veh]	0.53		0.00		30.10	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.96					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	13.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	135	0	0	103	6	18	6	14	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	763	120	68	697	49	54	44	70	24	7	12
Peak Hour Factor	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	222	35	20	203	14	16	13	20	7	2	3
Total Analysis Volume [veh/h]	43	888	140	79	811	57	63	51	81	28	8	14
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	28	0	12	27	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	40	40	4	41	41	11	11	11
g / C, Green / Cycle	0.04	0.57	0.57	0.06	0.58	0.58	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.28	0.28	0.04	0.23	0.23	0.14	0.03	0.01
s, saturation flow rate [veh/h]	1810	1900	1811	1810	1900	1856	1441	1056	1615
c, Capacity [veh/h]	74	1074	1024	103	1105	1079	304	264	264
d1, Uniform Delay [s]	32.99	9.15	9.15	32.57	7.98	7.98	28.64	25.08	24.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.00	1.60	1.68	11.24	1.07	1.10	2.26	0.23	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.58	0.49	0.49	0.77	0.40	0.40	0.64	0.14	0.05
d, Delay for Lane Group [s/veh]	39.99	10.75	10.83	43.80	9.05	9.08	30.90	25.31	24.80
Lane Group LOS	D	B	B	D	A	A	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.82	4.21	4.03	1.56	3.08	3.01	3.13	0.49	0.19
50th-Percentile Queue Length [ft/ln]	20.47	105.13	100.82	39.03	76.90	75.32	78.30	12.35	4.71
95th-Percentile Queue Length [veh/ln]	1.47	7.57	7.26	2.81	5.54	5.42	5.64	0.89	0.34
95th-Percentile Queue Length [ft/ln]	36.85	189.20	181.47	70.26	138.42	135.58	140.94	22.24	8.48

Movement, Approach, & Intersection Results

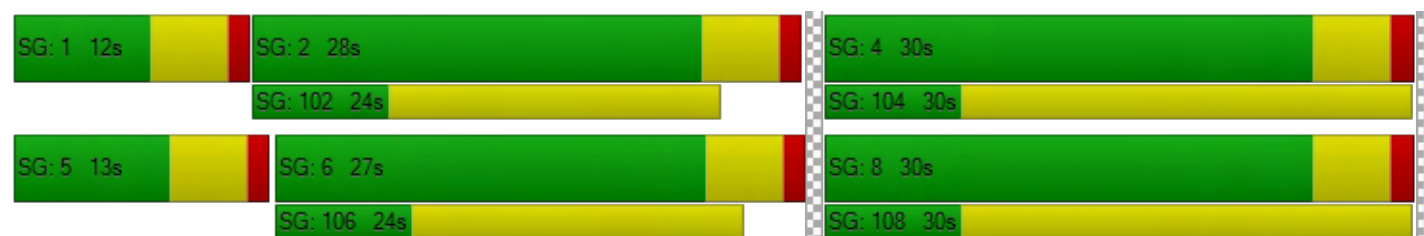
d_M, Delay for Movement [s/veh]	39.99	10.78	10.83	43.80	9.07	9.08	30.90	30.90	30.90	25.31	25.31	24.80
Movement LOS	D	B	B	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	11.96			11.96			30.90			25.17		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	13.89											
Intersection LOS	B											
Intersection V/C	0.550											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.910			2.943			1.898			2.065		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	657			629			714			714		
d_b, Bicycle Delay [s]	15.78			16.46			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.443			2.341			1.881			1.642		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	49.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.811

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	75	5	2	108	7	57	32	16	23	6	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	627	71	116	645	42	129	215	61	46	201	152
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	182	21	34	187	12	37	62	18	13	58	44
Total Analysis Volume [veh/h]	43	728	82	135	749	49	150	250	71	53	234	177
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	40	0	15	40	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	37	37	10	43	43	33	21	21
g / C, Green / Cycle	0.03	0.31	0.31	0.08	0.36	0.36	0.27	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.22	0.07	0.21	0.21	0.26	0.15	0.11
s, saturation flow rate [veh/h]	1810	1900	1833	1810	1900	1859	1822	1883	1615
c, Capacity [veh/h]	59	581	561	152	678	664	497	322	276
d1, Uniform Delay [s]	57.55	36.95	36.95	54.45	31.50	31.50	42.85	48.66	46.32
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.37	0.15	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	15.66	7.17	7.43	15.61	3.81	3.89	24.01	11.17	2.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.71	0.71	0.89	0.59	0.59	0.95	0.89	0.64
d, Delay for Lane Group [s/veh]	73.21	44.12	44.38	70.06	35.31	35.39	66.86	59.83	48.78
Lane Group LOS	E	D	D	E	D	D	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.55	11.82	11.45	4.63	9.98	9.78	16.60	9.23	5.02
50th-Percentile Queue Length [ft/ln]	38.78	295.40	286.22	115.73	249.43	244.47	414.91	230.76	125.52
95th-Percentile Queue Length [veh/ln]	2.79	17.45	17.00	8.16	15.16	14.91	23.28	14.21	8.70
95th-Percentile Queue Length [ft/ln]	69.80	436.34	424.95	203.95	378.94	372.69	581.93	355.32	217.39

Movement, Approach, & Intersection Results

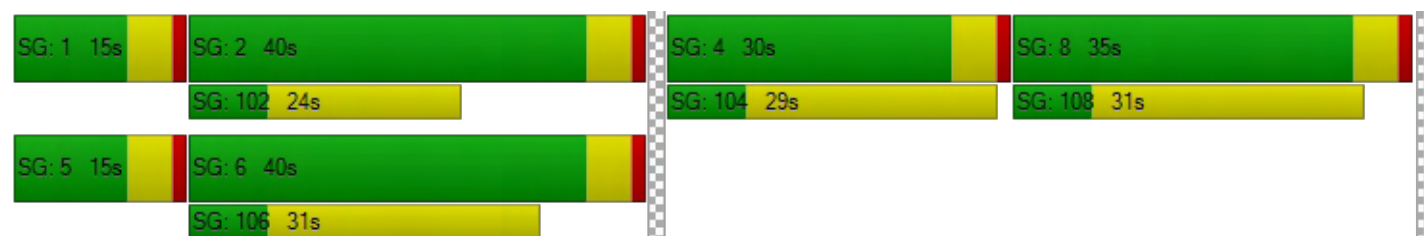
d_M, Delay for Movement [s/veh]	73.21	44.23	44.38	70.06	35.35	35.39	66.86	66.86	66.86	59.83	59.83	48.78
Movement LOS	E	D	D	E	D	D	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	45.71			40.37			66.86			55.62		
Approach LOS	D			D			E			E		
d_I, Intersection Delay [s/veh]	49.23											
Intersection LOS	D											
Intersection V/C	0.811											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.747			2.897			2.247			2.357		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	583			583			500			417		
d_b, Bicycle Delay [s]	30.10			30.10			33.75			37.60		
I_b,int, Bicycle LOS Score for Intersection	2.263			2.329			2.337			2.325		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	158	1	1	188	1	2	1	7	5	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	666	19	55	705	69	76	106	57	17	48	33
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	195	6	16	206	20	22	31	17	5	14	10
Total Analysis Volume [veh/h]	25	778	22	64	824	81	89	124	67	20	56	39
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	29	0	15	29	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	48	48	4	50	50	18	11	18	8	8
g / C, Green / Cycle	0.03	0.56	0.56	0.05	0.58	0.58	0.22	0.13	0.22	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.21	0.21	0.04	0.23	0.05	0.06	0.11	0.01	0.03	0.02
s, saturation flow rate [veh/h]	1810	1900	1882	1810	3618	1615	1558	1789	1374	1900	1615
c, Capacity [veh/h]	50	1064	1054	86	2098	937	432	240	302	190	162
d1, Uniform Delay [s]	40.84	10.45	10.46	40.07	9.74	7.92	27.55	35.78	26.90	35.56	35.36
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.42	1.02	1.03	11.91	0.55	0.18	0.23	5.98	0.09	0.85	0.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.38	0.38	0.74	0.39	0.09	0.21	0.80	0.07	0.29	0.24
d, Delay for Lane Group [s/veh]	48.26	11.48	11.49	51.98	10.29	8.10	27.78	41.75	26.99	36.41	36.13
Lane Group LOS	D	B	B	D	B	A	C	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.60	3.88	3.85	1.56	3.66	0.61	1.50	4.16	0.32	1.11	0.77
50th-Percentile Queue Length [ft/ln]	15.05	96.98	96.14	38.96	91.41	15.15	37.38	104.06	8.12	27.68	19.25
95th-Percentile Queue Length [veh/ln]	1.08	6.98	6.92	2.81	6.58	1.09	2.69	7.49	0.58	1.99	1.39
95th-Percentile Queue Length [ft/ln]	27.09	174.56	173.06	70.13	164.54	27.27	67.28	187.30	14.61	49.82	34.65

Movement, Approach, & Intersection Results

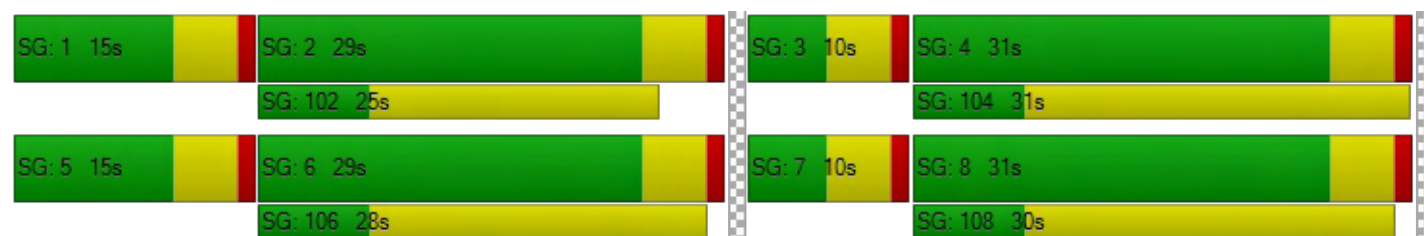
d_M, Delay for Movement [s/veh]	48.26	11.48	11.49	51.98	10.29	8.10	27.78	41.75	41.75	26.99	36.41	36.13
Movement LOS	D	B	B	D	B	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.60			12.86			37.31			34.67		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	17.04											
Intersection LOS	B											
Intersection V/C	0.447											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.830			2.954			2.080			2.207		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	565			565			612			612		
d_b, Bicycle Delay [s]	21.89			21.89			20.48			20.48		
I_b,int, Bicycle LOS Score for Intersection	2.240			2.359			2.022			1.749		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report
Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	62	16	45	72	83	63	39	46	20	51	35
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	428	81	146	365	170	156	761	81	66	851	83
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	123	23	42	105	49	45	219	23	19	245	24
Total Analysis Volume [veh/h]	82	492	93	168	420	195	179	875	93	76	978	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	10	31	31	4	25	25
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.12	0.38	0.38	0.06	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.08	0.16	0.16	0.20	0.22	0.12	0.10	0.26	0.26	0.04	0.29	0.29
s, saturation flow rate [veh/h]	982	1900	1797	843	1900	1615	1810	1900	1837	1810	1900	1842
c, Capacity [veh/h]	269	714	675	293	714	607	219	724	700	101	601	582
d1, Uniform Delay [s]	29.23	18.54	18.56	28.81	20.04	17.75	34.34	20.69	20.70	37.27	26.26	26.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.16	0.16	0.11	0.26	0.26
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.91	1.81	1.94	7.92	3.54	1.40	7.32	1.69	1.76	10.66	11.88	12.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.42	0.42	0.57	0.59	0.32	0.82	0.68	0.68	0.75	0.91	0.91
d, Delay for Lane Group [s/veh]	32.15	20.35	20.49	36.73	23.58	19.15	41.67	22.38	22.46	47.92	38.14	38.56
Lane Group LOS	C	C	C	D	C	B	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.55	4.12	3.94	3.49	6.39	2.58	3.71	7.39	7.17	1.72	11.20	10.94
50th-Percentile Queue Length [ft/ln]	38.68	102.96	98.49	87.20	159.81	64.41	92.81	184.85	179.27	42.98	280.06	273.44
95th-Percentile Queue Length [veh/ln]	2.78	7.41	7.09	6.28	10.54	4.64	6.68	11.85	11.56	3.09	16.69	16.36
95th-Percentile Queue Length [ft/ln]	69.62	185.32	177.29	156.95	263.47	115.94	167.06	296.34	289.06	77.36	417.29	409.03

Movement, Approach, & Intersection Results

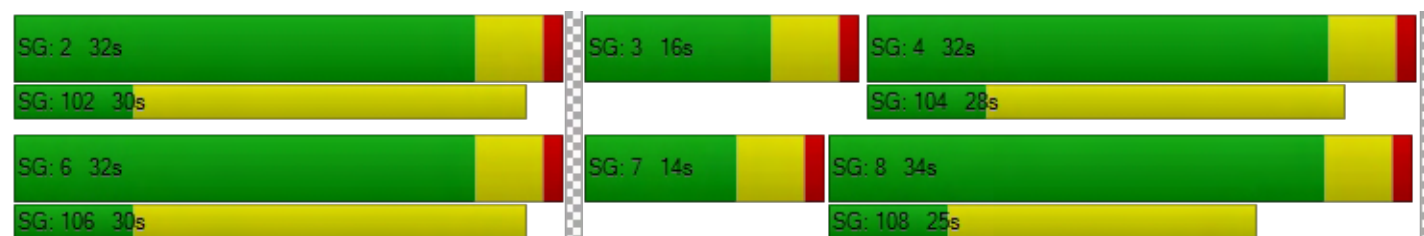
d_M, Delay for Movement [s/veh]	32.15	20.41	20.49	36.73	23.58	19.15	41.67	22.41	22.46	47.92	38.32	38.56
Movement LOS	C	C	C	D	C	B	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.86			25.30			25.42			38.98		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	28.92											
Intersection LOS	C											
Intersection V/C	0.714											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.533			2.782			2.956			3.052		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.110			2.852			2.506			2.508		
Bicycle LOS	B			C			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	21	0	0	0	0	0	0	0	64
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	21	0	0	0	10	0	0	1	64
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	6	0	0	0	3	0	0	0	17
Total Analysis Volume [veh/h]	0	0	0	23	0	0	0	11	0	0	1	70
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.75	9.43	8.35	8.85	9.33	8.55	7.33	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.07	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	1.84	1.84	1.84	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.84			8.85			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.94											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	21	64	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	0	0	31	65	18
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	0	8	18	5
Total Analysis Volume [veh/h]	9	0	0	34	71	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.10	8.70	7.37	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.77	0.77	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.10		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	A					

S2A Modular Manufacturing

Vistro File: G:\...\IPM.vistro

Scenario 7 Opening Year (Phase1) with Project

Report File: G:\...\IPMOY1p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.817	33.7	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.539	91.7	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.609	13.8	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	EB Thru	0.986	81.5	F
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.548	17.4	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	SB Left	0.931	49.8	D
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.4	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.024	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	33.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.817

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	54	130	46	10	124	14	14	16	48	41	17	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	724	219	233	786	111	128	534	135	168	535	161
Peak Hour Factor	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	204	62	66	222	31	36	151	38	47	151	45
Total Analysis Volume [veh/h]	167	817	247	263	887	125	145	603	152	190	604	182
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	30	0	12	30	0	11	32	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	7	32	32	44	32	32	32	20	20	32	20	20
g / C, Green / Cycle	0.08	0.37	0.37	0.51	0.37	0.37	0.37	0.24	0.24	0.37	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.29	0.32	0.27	0.27	0.13	0.21	0.21	0.18	0.17	0.11
s, saturation flow rate [veh/h]	1810	1900	1751	834	1900	1819	1113	1900	1770	1036	3618	1615
c, Capacity [veh/h]	152	703	647	414	703	673	405	455	424	364	867	387
d1, Uniform Delay [s]	39.13	23.91	23.97	16.94	23.29	23.32	19.75	31.09	31.10	21.30	29.65	27.83
k, delay calibration	0.11	0.50	0.50	0.36	0.50	0.50	0.11	0.13	0.13	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	63.93	8.63	9.52	5.23	6.70	7.09	0.53	5.87	6.28	1.16	1.02	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.79	0.79	0.64	0.73	0.74	0.36	0.86	0.86	0.52	0.70	0.47
d, Delay for Lane Group [s/veh]	103.05	32.55	33.49	22.17	29.99	30.41	20.28	36.96	37.38	22.46	30.67	28.72
Lane Group LOS	F	C	C	C	C	C	C	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.75	10.68	10.07	3.12	9.50	9.21	1.85	7.84	7.35	2.53	5.35	3.05
50th-Percentile Queue Length [ft/ln]	143.74	267.12	251.76	78.12	237.41	230.20	46.21	196.01	183.87	63.14	133.83	76.36
95th-Percentile Queue Length [veh/ln]	9.99	16.05	15.27	5.62	14.55	14.18	3.33	12.43	11.80	4.55	9.15	5.50
95th-Percentile Queue Length [ft/ln]	249.66	401.14	381.87	140.62	363.76	354.61	83.18	310.81	295.06	113.66	228.69	137.46

Movement, Approach, & Intersection Results

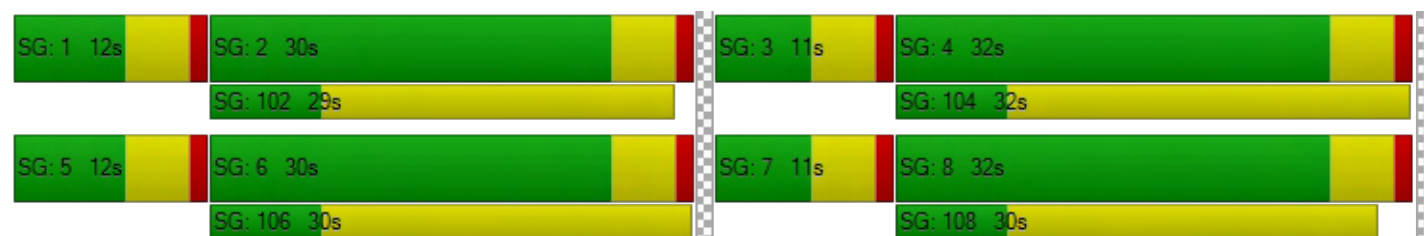
d_M, Delay for Movement [s/veh]	103.05	32.85	33.49	22.17	30.17	30.41	20.28	37.11	37.38	22.46	30.67	28.72
Movement LOS	F	C	C	C	C	C	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	42.50			28.54			34.44			28.71		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	33.71											
Intersection LOS	C											
Intersection V/C	0.817											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	3.007			2.980			2.822			3.106		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.575			2.611			2.302			2.365		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	91.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	193	195	15	32	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	1044	1035	21	37	41
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	285	283	6	10	11
Total Analysis Volume [veh/h]	24	1141	1131	23	40	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.54	0.10
d_M, Delay for Movement [s/veh]	11.11	0.00	0.00	0.00	91.72	50.93
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh/ln]	0.12	0.00	0.00	0.00	3.37	3.37
95th-Percentile Queue Length [ft/ln]	3.05	0.00	0.00	0.00	84.31	84.31
d_A, Approach Delay [s/veh]	0.23		0.00		70.13	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	13.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	199	0	0	212	19	12	11	9	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	67	970	24	15	1007	65	59	11	60	45	41	27
Peak Hour Factor	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	276	7	4	287	19	17	3	17	13	12	8
Total Analysis Volume [veh/h]	76	1105	27	17	1147	74	67	13	68	51	47	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	36	0	12	33	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	42	42	1	39	39	12	12	12
g / C, Green / Cycle	0.06	0.60	0.60	0.02	0.56	0.56	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.04	0.30	0.30	0.01	0.32	0.33	0.14	0.07	0.02
s, saturation flow rate [veh/h]	1810	1900	1884	1810	1900	1860	1073	1441	1615
c, Capacity [veh/h]	101	1137	1128	38	1071	1048	253	318	269
d1, Uniform Delay [s]	32.59	8.05	8.05	33.90	9.88	9.88	28.88	25.78	24.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.53	1.57	1.58	8.01	2.25	2.31	2.14	0.54	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.50	0.50	0.45	0.58	0.58	0.58	0.31	0.12
d, Delay for Lane Group [s/veh]	43.12	9.62	9.64	41.90	12.13	12.19	31.02	26.33	25.02
Lane Group LOS	D	A	A	D	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.49	4.12	4.09	0.35	5.37	5.29	2.42	1.39	0.42
50th-Percentile Queue Length [ft/ln]	37.23	103.03	102.34	8.86	134.34	132.18	60.43	34.67	10.52
95th-Percentile Queue Length [veh/ln]	2.68	7.42	7.37	0.64	9.18	9.06	4.35	2.50	0.76
95th-Percentile Queue Length [ft/ln]	67.01	185.45	184.22	15.94	229.39	226.46	108.77	62.40	18.94

Movement, Approach, & Intersection Results

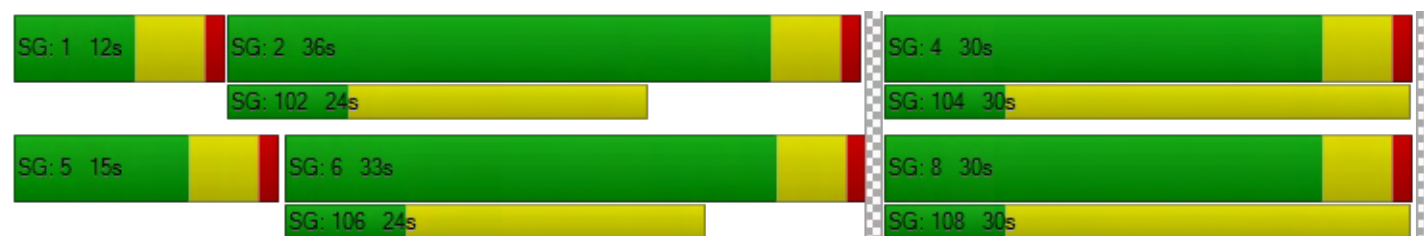
d_M, Delay for Movement [s/veh]	43.12	9.63	9.64	41.90	12.16	12.19	31.02	31.02	31.02	26.33	26.33	25.02
Movement LOS	D	A	A	D	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	11.74			12.57			31.02			26.01		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	13.84											
Intersection LOS	B											
Intersection V/C	0.609											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	3.048			3.063			1.925			2.007		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	886			800			714			714		
d_b, Bicycle Delay [s]	10.86			12.60			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.556			2.581			1.804			1.772		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	81.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.986

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	119	6	9	193	19	91	57	17	55	9	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	756	85	141	915	121	157	315	51	109	240	121
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	208	23	39	252	33	43	87	14	30	66	33
Total Analysis Volume [veh/h]	53	833	94	155	1008	133	173	347	56	120	264	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	16	37	0	16	37	0	0	37	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	5	32	32	11	39	39	32	25	25
g / C, Green / Cycle	0.04	0.27	0.27	0.09	0.32	0.32	0.27	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.03	0.25	0.25	0.09	0.31	0.31	0.31	0.21	0.08
s, saturation flow rate [veh/h]	1810	1900	1833	1810	1900	1824	1841	1871	1615
c, Capacity [veh/h]	70	509	491	167	610	585	488	390	337
d1, Uniform Delay [s]	57.13	42.83	42.83	54.11	39.86	39.94	44.12	47.34	41.00
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.30	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.86	25.43	26.07	19.06	26.42	27.90	100.58	31.95	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.93	0.93	0.93	0.95	0.96	1.18	0.99	0.40
d, Delay for Lane Group [s/veh]	71.99	68.26	68.90	73.17	66.28	67.84	144.70	79.30	41.76
Lane Group LOS	E	E	E	E	E	E	F	E	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.88	17.12	16.60	5.45	20.64	20.15	27.68	14.60	3.41
50th-Percentile Queue Length [ft/ln]	47.09	427.95	415.09	136.26	515.92	503.68	691.92	365.04	85.31
95th-Percentile Queue Length [veh/ln]	3.39	23.90	23.29	9.28	28.09	27.51	39.96	20.87	6.14
95th-Percentile Queue Length [ft/ln]	84.76	597.59	582.15	231.98	702.17	687.71	998.99	521.71	153.56

Movement, Approach, & Intersection Results

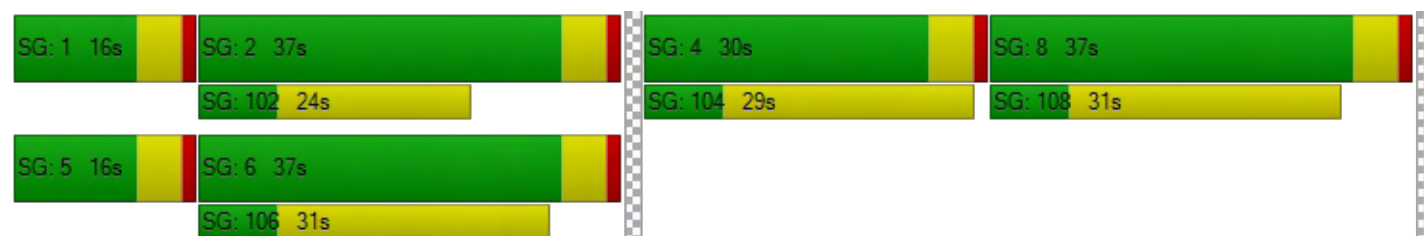
d_M, Delay for Movement [s/veh]	71.99	68.54	68.90	73.17	66.95	67.84	144.70	144.70	144.70	79.30	79.30	41.76
Movement LOS	E	E	E	E	E	E	F	F	F	E	E	D
d_A, Approach Delay [s/veh]	68.76			67.78			144.70			69.64		
Approach LOS	E			E			F			E		
d_I, Intersection Delay [s/veh]	81.50											
Intersection LOS	F											
Intersection V/C	0.986											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.818			2.994			2.396			2.436		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	533			533			533			417		
d_b, Bicycle Delay [s]	32.27			32.27			32.27			37.60		
I_b,int, Bicycle LOS Score for Intersection	2.368			2.629			2.510			2.413		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	17.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	320	11	2	305	3	1	1	10	8	1	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	965	18	44	986	77	87	105	75	13	78	36
Peak Hour Factor	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	255	5	12	261	20	23	28	20	3	21	10
Total Analysis Volume [veh/h]	66	1020	19	47	1043	81	92	111	79	14	82	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	25	0	14	28	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	4	45	45	3	44	44	17	11	17	8	8
g / C, Green / Cycle	0.05	0.56	0.56	0.04	0.55	0.55	0.22	0.14	0.22	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.04	0.27	0.27	0.03	0.29	0.05	0.06	0.11	0.01	0.04	0.02
s, saturation flow rate [veh/h]	1810	1900	1888	1810	3618	1615	1549	1770	1366	1900	1615
c, Capacity [veh/h]	90	1053	1046	76	1977	883	422	241	309	180	153
d1, Uniform Delay [s]	37.60	10.99	10.99	37.79	11.59	8.69	25.98	33.53	25.21	34.36	33.67
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.93	1.66	1.68	7.84	1.01	0.21	0.26	5.66	0.06	1.79	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.50	0.50	0.62	0.53	0.09	0.22	0.79	0.05	0.46	0.25
d, Delay for Lane Group [s/veh]	48.53	12.66	12.67	45.63	12.61	8.89	26.24	39.19	25.27	36.15	34.50
Lane Group LOS	D	B	B	D	B	A	C	D	C	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.49	5.19	5.16	1.03	5.20	0.62	1.44	3.86	0.21	1.57	0.71
50th-Percentile Queue Length [ft/ln]	37.35	129.65	128.91	25.86	129.91	15.57	36.07	96.51	5.27	39.26	17.70
95th-Percentile Queue Length [veh/ln]	2.69	8.92	8.88	1.86	8.93	1.12	2.60	6.95	0.38	2.83	1.27
95th-Percentile Queue Length [ft/ln]	67.24	223.01	222.02	46.55	223.37	28.03	64.93	173.71	9.49	70.68	31.86

Movement, Approach, & Intersection Results

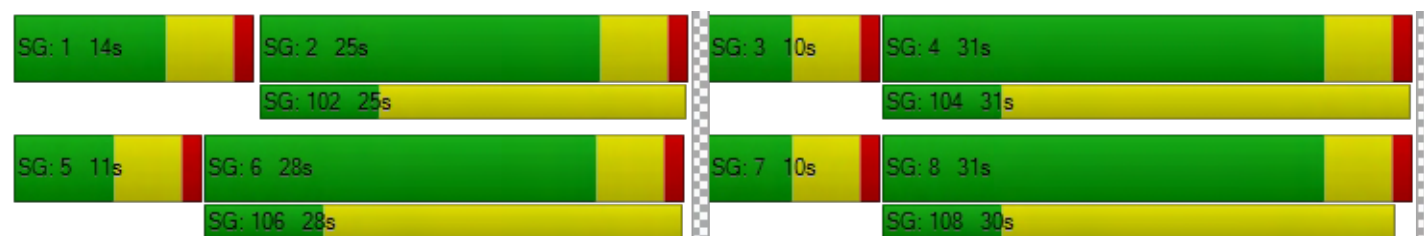
d_M, Delay for Movement [s/veh]	48.53	12.66	12.67	45.63	12.61	8.89	26.24	39.19	39.19	25.27	36.15	34.50
Movement LOS	D	B	B	D	B	A	C	D	D	C	D	C
d_A, Approach Delay [s/veh]	14.81			13.68			34.97			34.55		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.41											
Intersection LOS	B											
Intersection V/C	0.548											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.935			3.034			2.100			2.200		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	500			575			650			650		
d_b, Bicycle Delay [s]	22.50			20.31			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.471			2.526			2.025			1.781		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	49.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.931

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	134	43	76	124	123	132	60	76	37	55	78
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	143	498	120	228	467	303	271	1173	136	136	1119	162
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	136	33	62	128	83	74	321	37	37	306	44
Total Analysis Volume [veh/h]	156	545	131	249	511	331	296	1283	149	149	1224	177
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	11	37	0	11	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	43	32	32	43	32	32
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.51	0.38	0.38	0.51	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.18	0.32	0.27	0.20	0.43	0.38	0.39	0.22	0.37	0.38
s, saturation flow rate [veh/h]	903	1900	1774	775	1900	1615	689	1900	1832	668	1900	1818
c, Capacity [veh/h]	202	718	670	254	718	610	329	721	695	322	713	682
d1, Uniform Delay [s]	38.33	20.17	20.17	36.21	22.51	20.70	24.17	26.38	26.38	18.18	26.51	26.56
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.43	0.45	0.14	0.43	0.44
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.23	2.35	2.53	51.98	5.93	3.44	29.44	31.42	38.26	1.35	30.47	35.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.49	0.49	0.98	0.71	0.54	0.90	1.00	1.02	0.46	1.00	1.01
d, Delay for Lane Group [s/veh]	62.56	22.52	22.70	88.19	28.44	24.14	53.61	57.80	64.65	19.53	56.98	61.96
Lane Group LOS	E	C	C	F	C	C	D	F	F	B	E	F
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.52	5.34	5.02	8.71	9.13	5.32	5.73	19.67	20.29	1.51	19.23	19.40
50th-Percentile Queue Length [ft/ln]	113.12	133.39	125.56	217.78	228.23	132.92	143.17	491.69	507.18	37.81	480.86	484.95
95th-Percentile Queue Length [veh/ln]	8.01	9.12	8.70	13.55	14.08	9.10	9.65	26.96	28.12	2.72	26.43	26.85
95th-Percentile Queue Length [ft/ln]	200.34	228.09	217.45	338.78	352.11	227.46	241.29	673.97	703.01	68.06	660.68	671.32

Movement, Approach, & Intersection Results

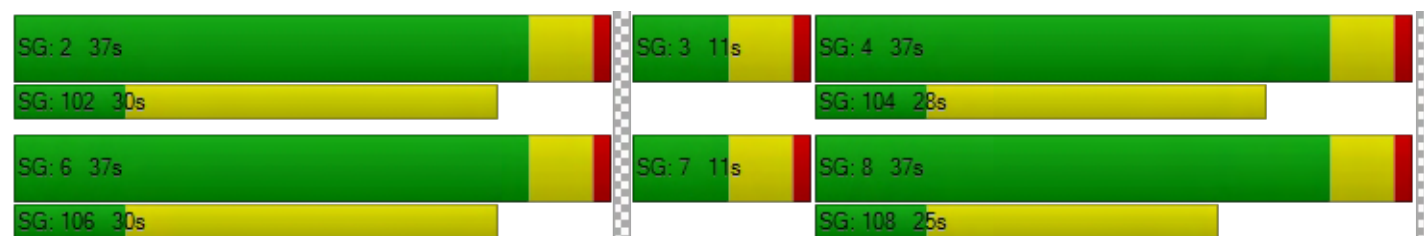
d_M, Delay for Movement [s/veh]	62.56	22.58	22.70	88.19	28.44	24.14	53.61	60.80	64.65	19.53	59.07	61.96
Movement LOS	E	C	C	F	C	C	D	E	E	B	E	E
d_A, Approach Delay [s/veh]	30.10			40.77			59.90			55.60		
Approach LOS	C			D			E			E		
d_I, Intersection Delay [s/veh]	49.84											
Intersection LOS	D											
Intersection V/C	0.931											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.747			3.074			3.301			3.382		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	753			753			753			753		
d_b, Bicycle Delay [s]	16.52			16.52			16.52			16.52		
I_b,int, Bicycle LOS Score for Intersection	2.246			3.360			2.985			2.838		
Bicycle LOS	B			C			C			C		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	48	0	0	0	0	0	0	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	48	0	0	0	10	0	0	10	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	13	0	0	0	3	0	0	3	6
Total Analysis Volume [veh/h]	0	0	0	52	0	0	0	11	0	0	11	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.68	9.24	8.35	8.89	9.38	8.61	7.27	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	4.21	4.21	4.21	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.76			8.89			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.67											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	0	0	48	23	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	0	58	33	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	0	16	9	3
Total Analysis Volume [veh/h]	22	0	0	63	36	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.11	8.58	7.29	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.88	1.88	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.11		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.52					
Intersection LOS	A					

COMPLETION YEAR (2024) PLUS PROJECT (EAGP)

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro

Scenario 5 Opening Year (Phase2) (EAGp)

Report File: G:\...\AMEAG2p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.577	25.0	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.416	63.3	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.536	13.1	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.764	40.3	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.431	17.1	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.645	27.1	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	NB Thru	0.000	10.0	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.017	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	25.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.577

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	10	6	0	35	0	0	0	33	22	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	57	565	92	188	661	103	72	383	106	129	471	177
Peak Hour Factor	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	155	25	51	181	28	20	105	29	35	129	48
Total Analysis Volume [veh/h]	62	618	101	206	723	113	79	419	116	141	515	194
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	4	38	38	50	41	41	25	15	15	25	16	16
g / C, Green / Cycle	0.05	0.45	0.45	0.58	0.48	0.48	0.30	0.18	0.18	0.30	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.03	0.19	0.19	0.22	0.23	0.23	0.07	0.15	0.15	0.12	0.14	0.12
s, saturation flow rate [veh/h]	1810	1900	1808	952	1900	1811	1161	1900	1761	1177	3618	1615
c, Capacity [veh/h]	83	850	809	581	911	869	352	342	317	354	683	305
d1, Uniform Delay [s]	40.10	16.12	16.13	9.41	14.87	14.87	22.77	33.49	33.54	23.74	32.64	31.82
k, delay calibration	0.11	0.50	0.50	0.15	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.34	1.61	1.69	0.52	1.73	1.82	0.32	4.55	5.13	0.73	1.72	2.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.43	0.43	0.35	0.47	0.47	0.22	0.81	0.82	0.40	0.75	0.64
d, Delay for Lane Group [s/veh]	52.45	17.73	17.83	9.94	16.60	16.69	23.09	38.04	38.68	24.47	34.36	34.02
Lane Group LOS	D	B	B	A	B	B	C	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.52	4.81	4.60	1.59	5.38	5.15	1.11	5.55	5.25	2.06	4.85	3.63
50th-Percentile Queue Length [ft/ln]	37.96	120.16	115.09	39.71	134.38	128.67	27.69	138.66	131.18	51.60	121.19	90.66
95th-Percentile Queue Length [veh/ln]	2.73	8.40	8.12	2.86	9.18	8.87	1.99	9.41	9.00	3.72	8.46	6.53
95th-Percentile Queue Length [ft/ln]	68.34	210.05	203.06	71.48	229.43	221.68	49.84	235.22	225.10	92.88	211.46	163.19

Movement, Approach, & Intersection Results

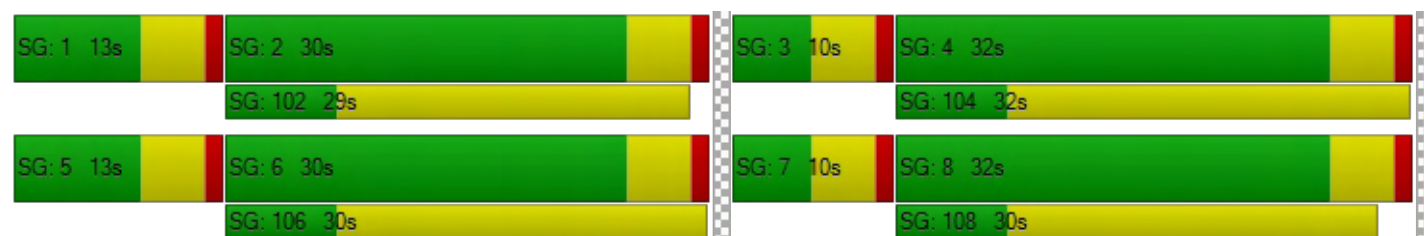
d_M, Delay for Movement [s/veh]	52.45	17.77	17.83	9.94	16.64	16.69	23.09	38.25	38.68	24.47	34.36	34.02
Movement LOS	D	B	B	A	B	B	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	20.53			15.32			36.38			32.64		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	24.97											
Intersection LOS	C											
Intersection V/C	0.577											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.795			2.823			2.678			2.972		
Crosswalk LOS	C			C			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.204			2.419			2.066			2.261		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	63.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.416

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	0	0	90	28	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	694	744	91	34	33
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	199	214	26	10	9
Total Analysis Volume [veh/h]	110	798	855	105	39	38
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.01	0.01	0.00	0.42	0.07
d_M, Delay for Movement [s/veh]	10.85	0.00	0.00	0.00	63.33	31.60
Movement LOS	B	A	A	A	F	D
95th-Percentile Queue Length [veh/ln]	0.53	0.00	0.00	0.00	2.32	2.32
95th-Percentile Queue Length [ft/ln]	13.33	0.00	0.00	0.00	57.96	57.96
d_A, Approach Delay [s/veh]	1.31		0.00		47.67	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.50					
Intersection LOS	F					

Intersection Level Of Service Report

Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	92	0	0	26	1	4	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	759	127	72	656	46	43	41	60	25	3	13
Peak Hour Factor	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	221	37	21	191	13	13	12	17	7	1	4
Total Analysis Volume [veh/h]	40	883	148	84	764	54	50	48	70	29	3	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	28	0	12	27	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	41	41	4	42	42	10	10	10
g / C, Green / Cycle	0.04	0.58	0.58	0.06	0.60	0.60	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.02	0.28	0.28	0.05	0.22	0.22	0.12	0.03	0.01
s, saturation flow rate [veh/h]	1810	1900	1806	1810	1900	1856	1409	978	1615
c, Capacity [veh/h]	71	1102	1047	109	1142	1116	272	240	235
d1, Uniform Delay [s]	33.06	8.56	8.57	32.41	7.12	7.12	29.30	26.29	25.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.91	1.50	1.58	10.63	0.89	0.91	2.29	0.25	0.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.48	0.48	0.77	0.36	0.36	0.62	0.13	0.06
d, Delay for Lane Group [s/veh]	39.98	10.06	10.14	43.05	8.01	8.03	31.59	26.54	25.92
Lane Group LOS	D	B	B	D	A	A	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.76	4.01	3.83	1.64	2.63	2.57	2.73	0.45	0.21
50th-Percentile Queue Length [ft/ln]	19.10	100.16	95.84	40.98	65.66	64.32	68.22	11.35	5.21
95th-Percentile Queue Length [veh/ln]	1.38	7.21	6.90	2.95	4.73	4.63	4.91	0.82	0.37
95th-Percentile Queue Length [ft/ln]	34.38	180.28	172.51	73.77	118.19	115.78	122.80	20.43	9.37

Movement, Approach, & Intersection Results

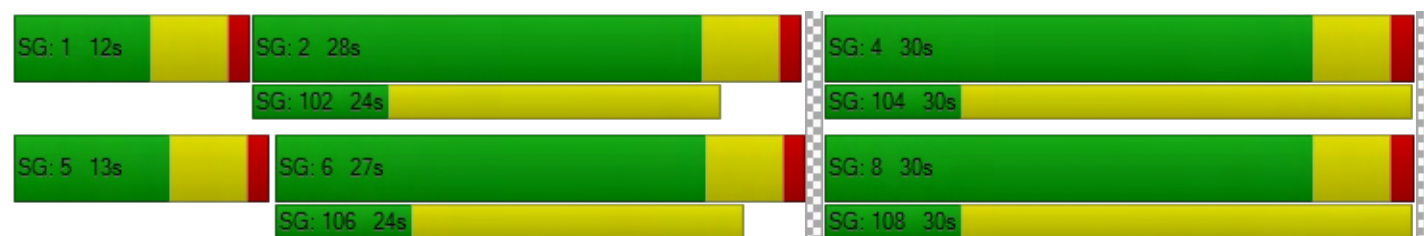
d_M, Delay for Movement [s/veh]	39.98	10.09	10.14	43.05	8.02	8.03	31.59	31.59	31.59	26.54	26.54	25.92
Movement LOS	D	B	B	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	11.21			11.28			31.59			26.34		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	13.13											
Intersection LOS	B											
Intersection V/C	0.536											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.899			2.911			1.873			2.068		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	657			629			714			714		
d_b, Bicycle Delay [s]	15.78			16.46			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.443			2.304			1.837			1.637		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	40.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	74	0	3	21	2	7	0	0	0	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	660	70	124	591	40	83	194	47	24	206	163
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	192	20	36	172	12	24	56	14	7	60	47
Total Analysis Volume [veh/h]	30	767	81	144	687	46	96	225	55	28	239	189
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	30	0	15	30	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	37	37	10	44	44	25	18	18
g / C, Green / Cycle	0.03	0.34	0.34	0.09	0.40	0.40	0.23	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.23	0.08	0.20	0.20	0.21	0.14	0.12
s, saturation flow rate [veh/h]	1810	1900	1837	1810	1900	1858	1829	1890	1615
c, Capacity [veh/h]	51	640	619	166	760	743	414	310	265
d1, Uniform Delay [s]	52.86	31.32	31.32	49.37	24.62	24.62	41.50	44.83	43.60
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.15	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.15	5.59	5.78	12.84	2.23	2.28	10.38	7.06	3.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.67	0.67	0.87	0.49	0.49	0.91	0.86	0.71
d, Delay for Lane Group [s/veh]	63.01	36.91	37.10	62.21	26.85	26.90	51.88	51.89	47.18
Lane Group LOS	E	D	D	E	C	C	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.96	10.67	10.36	4.42	7.36	7.21	10.81	7.52	5.02
50th-Percentile Queue Length [ft/ln]	24.08	266.87	258.94	110.38	184.04	180.32	270.37	188.02	125.56
95th-Percentile Queue Length [veh/ln]	1.73	16.03	15.64	7.86	11.81	11.62	16.21	12.02	8.70
95th-Percentile Queue Length [ft/ln]	43.35	400.83	390.89	196.53	295.29	290.43	405.20	300.46	217.45

Movement, Approach, & Intersection Results

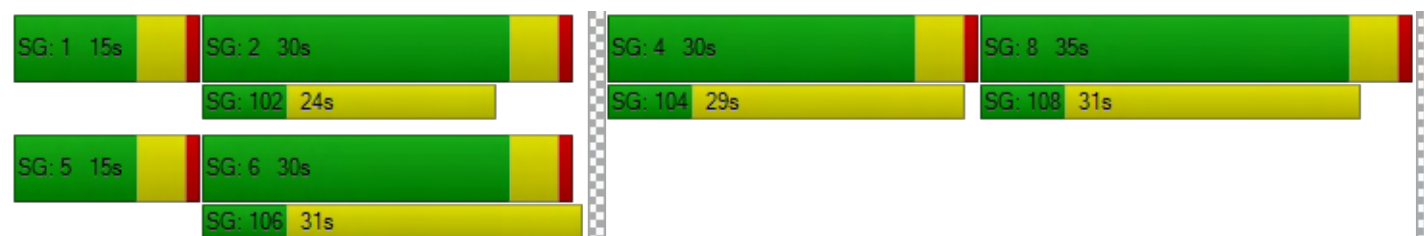
d_M, Delay for Movement [s/veh]	63.01	36.99	37.10	62.21	26.87	26.90	51.88	51.88	51.88	51.89	51.89	47.18
Movement LOS	E	D	D	E	C	C	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	37.89			32.68			51.88			49.94		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	40.28											
Intersection LOS	D											
Intersection V/C	0.764											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.730			2.880			2.174			2.342		
Crosswalk LOS	B			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	455			455			545			455		
d_b, Bicycle Delay [s]	32.84			32.84			29.09			32.84		
I_b,int, Bicycle LOS Score for Intersection	2.284			2.283			2.180			2.312		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type: Signalized
 Analysis Method: HCM 6th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 17.1
 Level Of Service: B
 Volume to Capacity (v/c): 0.431

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T T			T T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	66	0	1	19	1	4	0	0	0	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	605	19	58	568	73	82	112	53	13	51	37
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	177	6	17	166	21	24	33	15	4	15	11
Total Analysis Volume [veh/h]	25	707	22	68	664	85	96	131	62	15	60	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	29	0	10	29	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	44	44	4	46	46	17	11	17	7	7
g / C, Green / Cycle	0.03	0.55	0.55	0.05	0.57	0.57	0.22	0.14	0.22	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.01	0.19	0.19	0.04	0.18	0.05	0.06	0.11	0.01	0.03	0.03
s, saturation flow rate [veh/h]	1810	1900	1880	1810	3618	1615	1567	1798	1365	1900	1615
c, Capacity [veh/h]	51	1035	1024	91	2050	915	442	245	311	178	151
d1, Uniform Delay [s]	38.41	10.31	10.31	37.59	9.23	7.95	25.93	33.52	25.14	34.03	33.85
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.02	0.95	0.96	11.37	0.42	0.20	0.24	5.54	0.06	1.11	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.35	0.35	0.75	0.32	0.09	0.22	0.79	0.05	0.34	0.28
d, Delay for Lane Group [s/veh]	45.43	11.26	11.27	48.96	9.65	8.15	26.17	39.05	25.21	35.13	34.87
Lane Group LOS	D	B	B	D	A	A	C	D	C	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.56	3.34	3.31	1.55	2.67	0.61	1.50	3.91	0.23	1.13	0.81
50th-Percentile Queue Length [ft/ln]	14.10	83.46	82.70	38.67	66.65	15.33	37.62	97.81	5.64	28.17	20.18
95th-Percentile Queue Length [veh/ln]	1.02	6.01	5.95	2.78	4.80	1.10	2.71	7.04	0.41	2.03	1.45
95th-Percentile Queue Length [ft/ln]	25.38	150.23	148.87	69.60	119.98	27.59	67.72	176.06	10.15	50.71	36.33

Movement, Approach, & Intersection Results

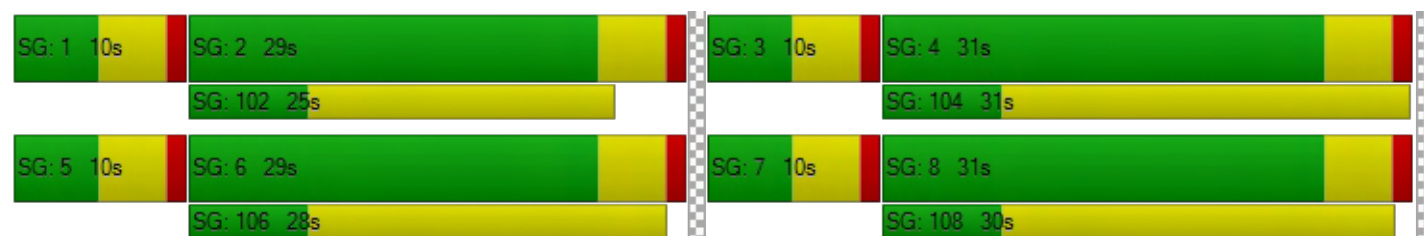
d_M, Delay for Movement [s/veh]	45.43	11.26	11.27	48.96	9.65	8.15	26.17	39.05	39.05	25.21	35.13	34.87
Movement LOS	D	B	B	D	A	A	C	D	D	C	D	C
d_A, Approach Delay [s/veh]	12.40			12.76			34.77			33.78		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.09											
Intersection LOS	B											
Intersection V/C	0.431											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.774			2.912			2.083			2.207		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			650			650		
d_b, Bicycle Delay [s]	19.60			19.60			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.182			2.234			2.036			1.754		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	27.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.645

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	0	3	10	6	21	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	424	68	110	321	99	119	766	38	49	849	61
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	122	20	32	92	28	34	220	11	14	244	18
Total Analysis Volume [veh/h]	46	487	78	126	369	114	137	880	44	56	976	70
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	8	29	29	4	25	25
g / C, Green / Cycle	0.40	0.40	0.40	0.40	0.40	0.40	0.10	0.36	0.36	0.05	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.15	0.15	0.19	0.07	0.08	0.25	0.25	0.03	0.28	0.28
s, saturation flow rate [veh/h]	1029	1900	1810	859	1900	1615	1810	1900	1868	1810	1900	1856
c, Capacity [veh/h]	336	767	730	326	767	652	174	690	679	83	594	581
d1, Uniform Delay [s]	24.29	16.80	16.82	24.67	17.68	15.33	35.38	21.51	21.51	37.62	26.21	26.21
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.13	0.13	0.11	0.24	0.24
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	1.41	1.49	3.43	2.16	0.58	7.58	1.39	1.42	9.11	9.92	10.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.38	0.38	0.39	0.48	0.17	0.79	0.67	0.67	0.67	0.89	0.89
d, Delay for Lane Group [s/veh]	25.14	18.21	18.31	28.10	19.84	15.92	42.96	22.90	22.93	46.73	36.13	36.37
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.73	3.67	3.54	2.20	5.00	1.32	2.89	7.08	6.97	1.26	10.56	10.35
50th-Percentile Queue Length [ft/ln]	18.33	91.85	88.56	54.95	125.08	33.07	72.15	176.97	174.17	31.44	263.91	258.83
95th-Percentile Queue Length [veh/ln]	1.32	6.61	6.38	3.96	8.67	2.38	5.19	11.44	11.30	2.26	15.88	15.63
95th-Percentile Queue Length [ft/ln]	33.00	165.33	159.40	98.91	216.79	59.53	129.87	286.06	282.39	56.58	397.12	390.76

Movement, Approach, & Intersection Results

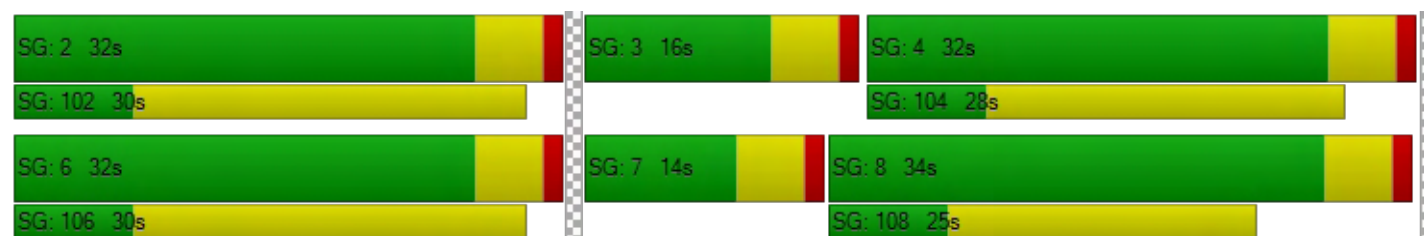
d_M, Delay for Movement [s/veh]	25.14	18.25	18.31	28.10	19.84	15.92	42.96	22.91	22.93	46.73	36.24	36.37
Movement LOS	C	B	B	C	B	B	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	18.78			20.82			25.50			36.78		
Approach LOS	B			C			C			D		
d_I, Intersection Delay [s/veh]	27.12											
Intersection LOS	C											
Intersection V/C	0.645											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.475			2.729			2.858			2.970		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.064			2.564			2.435			2.469		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	43	0	0	0	0	0	0	0	148
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	43	0	0	0	11	0	0	1	148
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	0	0	3	0	0	0	40
Total Analysis Volume [veh/h]	0	0	0	47	0	0	0	12	0	0	1	161
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.02	9.98	8.35	9.25	9.72	8.88	7.52	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	4.15	4.15	4.15	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.12			9.25			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.97											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	43	148	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	0	0	54	149	38
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	15	40	10
Total Analysis Volume [veh/h]	13	0	0	59	162	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.88	9.25	7.61	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.32	1.32	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.88		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	A					

S2A Modular Manufacturing

Vistro File: G:\...\PM.vistro

Scenario 5 Opening Year (Phase2) (EAGp)

Report File: G:\...\PMEAG2p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.767	30.7	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.886	160.4	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.539	12.3	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	SB Left	0.855	51.3	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.454	17.1	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Right	0.735	33.9	C
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.8	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.062	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	30.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	25	19	0	11	0	0	0	12	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	655	202	236	713	103	121	550	105	144	550	160
Peak Hour Factor	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	185	57	67	201	29	34	155	30	41	155	45
Total Analysis Volume [veh/h]	143	740	228	266	805	116	137	621	119	163	621	181
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	38	0	12	30	0	11	32	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	8	31	31	43	29	29	32	20	20	32	21	21
g / C, Green / Cycle	0.10	0.36	0.36	0.50	0.35	0.35	0.38	0.24	0.24	0.38	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.27	0.30	0.25	0.25	0.13	0.20	0.20	0.15	0.17	0.11
s, saturation flow rate [veh/h]	1810	1900	1748	877	1900	1817	1095	1900	1795	1073	3618	1615
c, Capacity [veh/h]	181	687	632	429	655	626	414	447	423	392	901	402
d1, Uniform Delay [s]	37.46	23.64	23.65	16.52	24.33	24.35	19.03	31.14	31.15	20.11	29.00	27.06
k, delay calibration	0.11	0.50	0.50	0.33	0.50	0.50	0.11	0.12	0.12	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.43	6.82	7.42	4.39	6.66	7.00	0.46	5.16	5.46	0.70	0.95	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.73	0.73	0.62	0.72	0.72	0.33	0.85	0.85	0.42	0.69	0.45
d, Delay for Lane Group [s/veh]	44.88	30.46	31.07	20.91	30.99	31.35	19.50	36.30	36.61	20.81	29.95	27.85
Lane Group LOS	D	C	C	C	C	C	B	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.16	9.34	8.72	3.14	8.79	8.49	1.70	7.54	7.17	2.07	5.44	2.98
50th-Percentile Queue Length [ft/ln]	79.04	233.54	217.95	78.47	219.71	212.13	42.58	188.61	179.21	51.77	136.04	74.57
95th-Percentile Queue Length [veh/ln]	5.69	14.35	13.56	5.65	13.65	13.26	3.07	12.05	11.56	3.73	9.27	5.37
95th-Percentile Queue Length [ft/ln]	142.27	358.85	339.00	141.24	341.25	331.56	76.65	301.23	288.99	93.18	231.69	134.22

Movement, Approach, & Intersection Results

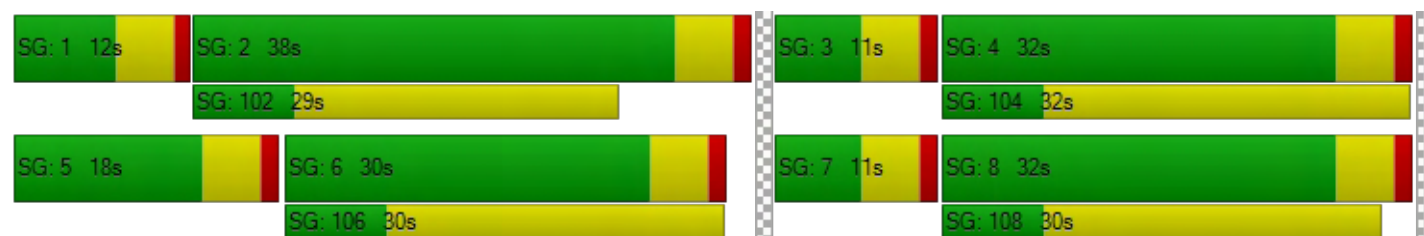
d_M, Delay for Movement [s/veh]	44.88	30.65	31.07	20.91	31.14	31.35	19.50	36.42	36.61	20.81	29.95	27.85
Movement LOS	D	C	C	C	C	C	B	D	D	C	C	C
d_A, Approach Delay [s/veh]	32.57			28.87			33.80			28.01		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.71											
Intersection LOS	C											
Intersection V/C	0.767											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.928			2.933			2.810			3.103		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	776			588			635			635		
d_b, Bicycle Delay [s]	15.91			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.476			2.539			2.283			2.356		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	160.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	0	32	72	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	903	891	39	78	85
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	247	243	11	21	23
Total Analysis Volume [veh/h]	44	987	973	43	85	93
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.01	0.00	0.89	0.18
d_M, Delay for Movement [s/veh]	10.57	0.00	0.00	0.00	160.43	129.88
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh/ln]	0.20	0.00	0.00	0.00	8.90	8.90
95th-Percentile Queue Length [ft/ln]	5.09	0.00	0.00	0.00	222.40	222.40
d_A, Approach Delay [s/veh]	0.45		0.00		144.47	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	11.77					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	12.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	0	0	75	4	2	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	852	25	15	919	53	52	0	54	47	30	29
Peak Hour Factor	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	243	7	4	262	15	15	0	15	13	9	8
Total Analysis Volume [veh/h]	63	971	28	17	1047	60	59	0	62	54	34	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	16	34	0	14	32	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	48	48	2	45	45	11	11	11
g / C, Green / Cycle	0.05	0.63	0.63	0.02	0.60	0.60	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.26	0.01	0.29	0.29	0.12	0.06	0.02
s, saturation flow rate [veh/h]	1810	1900	1881	1810	1900	1864	974	1397	1615
c, Capacity [veh/h]	90	1206	1194	37	1151	1129	213	280	234
d1, Uniform Delay [s]	35.13	6.81	6.81	36.33	8.26	8.26	31.94	29.00	28.02
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.59	1.06	1.07	8.33	1.47	1.50	2.39	0.64	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.70	0.42	0.42	0.45	0.49	0.49	0.57	0.31	0.14
d, Delay for Lane Group [s/veh]	44.72	7.87	7.88	44.66	9.73	9.76	34.33	29.63	28.29
Lane Group LOS	D	A	A	D	A	A	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.31	3.29	3.26	0.38	4.35	4.28	2.18	1.40	0.50
50th-Percentile Queue Length [ft/ln]	32.86	82.20	81.49	9.50	108.66	106.89	54.58	34.94	12.62
95th-Percentile Queue Length [veh/ln]	2.37	5.92	5.87	0.68	7.77	7.67	3.93	2.52	0.91
95th-Percentile Queue Length [ft/ln]	59.15	147.97	146.68	17.09	194.14	191.67	98.24	62.90	22.71

Movement, Approach, & Intersection Results

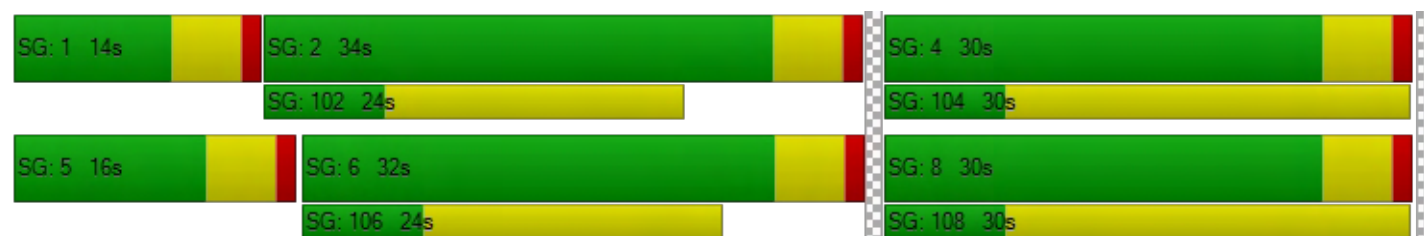
d_M, Delay for Movement [s/veh]	44.72	7.88	7.88	44.66	9.74	9.76	34.33	34.33	34.33	29.63	29.63	28.29
Movement LOS	D	A	A	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	10.06			10.27			34.33			29.27		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	12.33											
Intersection LOS	B											
Intersection V/C	0.539											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	27.31			27.31			27.31			27.31		
I_p,int, Pedestrian LOS Score for Intersection	3.002			3.001			1.885			2.002		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	773			720			667			667		
d_b, Bicycle Delay [s]	14.11			15.36			16.67			16.67		
I_b,int, Bicycle LOS Score for Intersection	2.436			2.487			1.759			1.759		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	51.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.855

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	0	13	53	9	4	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	700	84	153	819	117	74	274	36	57	245	130
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	193	23	42	226	32	20	75	10	16	67	36
Total Analysis Volume [veh/h]	35	771	93	169	902	129	82	302	40	63	270	143
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	15	35	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	31	31	10	38	38	27	22	22
g / C, Green / Cycle	0.03	0.28	0.28	0.09	0.34	0.34	0.25	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.23	0.09	0.28	0.28	0.23	0.18	0.09
s, saturation flow rate [veh/h]	1810	1900	1829	1810	1900	1818	1851	1882	1615
c, Capacity [veh/h]	56	537	517	166	652	624	459	370	317
d1, Uniform Delay [s]	52.73	36.90	36.90	50.02	32.87	32.90	40.38	43.20	39.01
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.26	0.18	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.94	13.17	13.63	37.76	10.35	10.88	16.62	12.39	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.82	0.82	1.02	0.81	0.81	0.92	0.90	0.45
d, Delay for Lane Group [s/veh]	63.67	50.07	50.53	87.78	43.22	43.77	57.00	55.59	40.01
Lane Group LOS	E	D	D	F	D	D	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.12	12.87	12.45	6.19	14.04	13.56	12.93	9.87	3.42
50th-Percentile Queue Length [ft/ln]	28.12	321.63	311.35	154.84	351.02	339.11	323.28	246.63	85.52
95th-Percentile Queue Length [veh/ln]	2.02	18.75	18.24	10.35	20.19	19.60	18.83	15.02	6.16
95th-Percentile Queue Length [ft/ln]	50.62	468.68	456.04	258.78	504.65	490.11	470.71	375.40	153.93

Movement, Approach, & Intersection Results

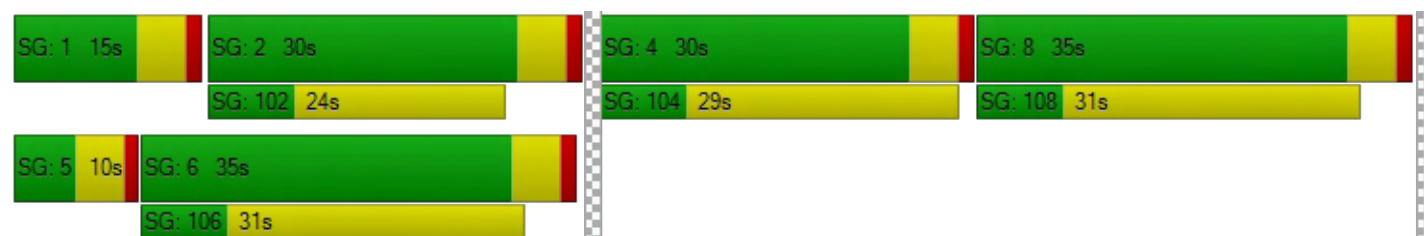
d_M, Delay for Movement [s/veh]	63.67	50.27	50.53	87.78	43.45	43.77	57.00	57.00	57.00	55.59	55.59	40.01
Movement LOS	E	D	D	F	D	D	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	50.82			49.73			57.00			50.91		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	51.27											
Intersection LOS	D											
Intersection V/C	0.855											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.55			44.55			44.55			44.55		
I_p,int, Pedestrian LOS Score for Intersection	2.772			2.938			2.282			2.400		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	455			545			545			455		
d_b, Bicycle Delay [s]	32.84			29.09			29.09			32.84		
I_b,int, Bicycle LOS Score for Intersection	2.301			2.550			2.259			2.345		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report

Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.454

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	0	4	45	4	2	0	0	0	0	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	705	8	48	768	82	94	110	68	6	82	40
Peak Hour Factor	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	186	2	13	203	22	25	29	18	2	22	11
Total Analysis Volume [veh/h]	55	745	8	51	812	87	99	116	72	6	87	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	27	0	13	28	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	4	45	45	3	45	45	16	11	16	6	6
g / C, Green / Cycle	0.04	0.56	0.56	0.04	0.56	0.56	0.21	0.13	0.21	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.03	0.20	0.20	0.03	0.22	0.05	0.06	0.11	0.00	0.05	0.03
s, saturation flow rate [veh/h]	1810	1900	1893	1810	3618	1615	1565	1780	1349	1900	1615
c, Capacity [veh/h]	83	1069	1065	80	2029	906	406	240	293	153	130
d1, Uniform Delay [s]	37.68	9.58	9.58	37.73	9.97	8.17	26.79	33.58	25.74	35.54	34.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.83	0.92	0.92	8.29	0.59	0.21	0.31	5.56	0.03	3.28	1.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.35	0.35	0.64	0.40	0.10	0.24	0.78	0.02	0.57	0.32
d, Delay for Lane Group [s/veh]	46.52	10.49	10.49	46.02	10.56	8.39	27.10	39.14	25.77	38.82	36.23
Lane Group LOS	D	B	B	D	B	A	C	D	C	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.22	3.26	3.25	1.13	3.51	0.64	1.59	3.82	0.09	1.74	0.81
50th-Percentile Queue Length [ft/ln]	30.48	81.54	81.27	28.14	87.80	16.02	39.64	95.39	2.28	43.61	20.25
95th-Percentile Queue Length [veh/ln]	2.19	5.87	5.85	2.03	6.32	1.15	2.85	6.87	0.16	3.14	1.46
95th-Percentile Queue Length [ft/ln]	54.86	146.78	146.29	50.65	158.05	28.84	71.36	171.70	4.11	78.49	36.46

Movement, Approach, & Intersection Results

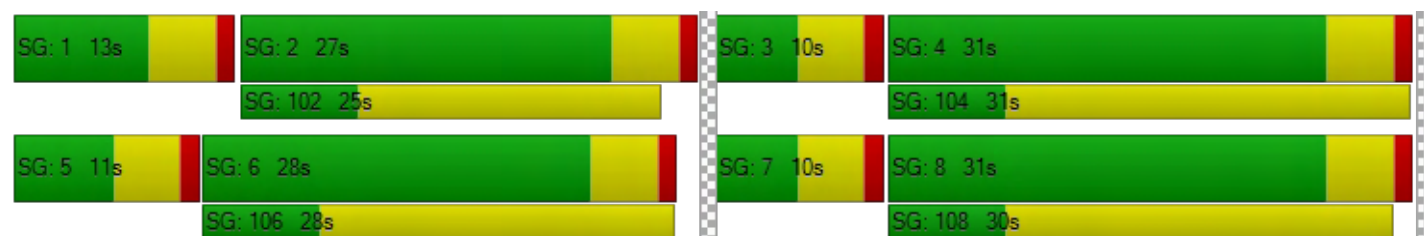
d_M, Delay for Movement [s/veh]	46.52	10.49	10.49	46.02	10.56	8.39	27.10	39.14	39.14	25.77	38.82	36.23
Movement LOS	D	B	B	D	B	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	12.94			12.27			34.99			37.44		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	17.07											
Intersection LOS	B											
Intersection V/C	0.454											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.815			2.943			2.101			2.200		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	550			575			650			650		
d_b, Bicycle Delay [s]	21.03			20.31			18.23			18.23		
I_b,int, Bicycle LOS Score for Intersection	2.226			2.343			2.033			1.782		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	33.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	7	25	13	6	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	397	82	168	389	204	154	1181	64	105	1129	92
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	109	22	46	106	56	42	323	18	29	309	25
Total Analysis Volume [veh/h]	59	434	90	184	426	223	168	1292	70	115	1235	101
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	43	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	34	34	34	34	34	34	46	36	36	46	35	35
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.51	0.40	0.40	0.51	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.06	0.14	0.14	0.21	0.22	0.14	0.24	0.36	0.36	0.18	0.36	0.36
s, saturation flow rate [veh/h]	977	1900	1789	892	1900	1615	705	1900	1866	643	1900	1850
c, Capacity [veh/h]	259	719	677	310	719	611	335	764	750	307	727	708
d1, Uniform Delay [s]	31.99	20.26	20.29	31.21	22.43	20.18	18.92	25.17	25.26	18.70	26.60	26.70
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.23	0.33	0.34	0.11	0.35	0.36
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.05	1.49	1.60	8.10	3.58	1.68	2.42	11.08	11.82	0.75	15.30	16.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.37	0.38	0.59	0.59	0.37	0.50	0.90	0.90	0.37	0.93	0.93
d, Delay for Lane Group [s/veh]	34.04	21.75	21.90	39.31	26.00	21.87	21.34	36.26	37.08	19.45	41.90	43.20
Lane Group LOS	C	C	C	D	C	C	C	D	D	B	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.22	4.12	3.94	4.23	7.42	3.45	1.91	15.03	15.02	1.18	15.97	15.91
50th-Percentile Queue Length [ft/ln]	30.52	102.95	98.46	105.63	185.48	86.13	47.85	375.65	375.62	29.61	399.19	397.73
95th-Percentile Queue Length [veh/ln]	2.20	7.41	7.09	7.60	11.89	6.20	3.45	21.38	21.38	2.13	22.52	22.45
95th-Percentile Queue Length [ft/ln]	54.93	185.31	177.23	189.91	297.16	155.03	86.14	534.58	534.54	53.30	563.03	561.26

Movement, Approach, & Intersection Results

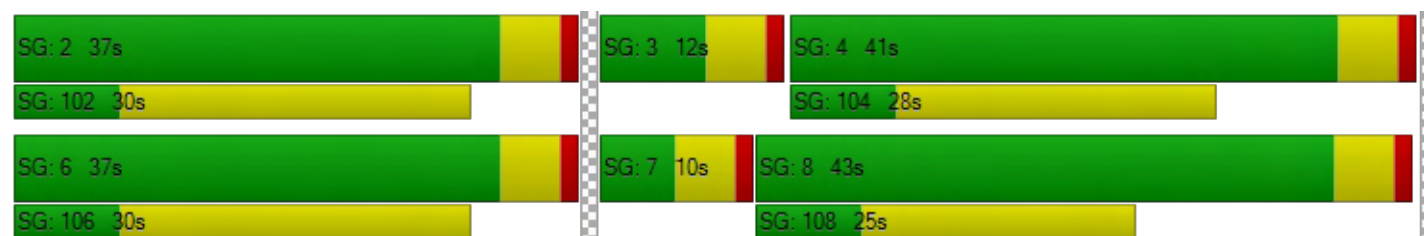
d_M, Delay for Movement [s/veh]	34.04	21.81	21.90	39.31	26.00	21.87	21.34	36.64	37.08	19.45	42.49	43.20
Movement LOS	C	C	C	D	C	C	C	D	D	B	D	D
d_A, Approach Delay [s/veh]	23.06			27.83			34.98			40.71		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	33.94											
Intersection LOS	C											
Intersection V/C	0.735											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.588			2.882			3.076			3.247		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			844			800		
d_b, Bicycle Delay [s]	18.69			18.69			15.02			16.20		
I_b,int, Bicycle LOS Score for Intersection	2.041			2.934			2.822			2.757		
Bicycle LOS	B			C			C			C		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	106	0	0	0	0	0	0	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	106	0	0	0	11	0	0	11	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	29	0	0	0	3	0	0	3	13
Total Analysis Volume [veh/h]	0	0	0	115	0	0	0	12	0	0	12	52
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.77	9.40	8.35	9.29	9.77	8.98	7.32	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.41	0.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	10.23	10.23	10.23	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.84			9.29			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.59											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	106	48	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	0	0	117	59	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	0	0	32	16	5
Total Analysis Volume [veh/h]	49	0	0	127	64	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.85	8.93	7.36	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.94	4.94	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.85		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.84					
Intersection LOS	A					

COMPLETION YEAR (2024) PLUS PROJECT PLUS CUMULATIVE (EAGPC)

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro

Scenario 4 Opening Year (Phase2) with Project

Report File: G:\...\AMOY2p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.641	26.0	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.550	95.6	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.603	14.8	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	SB Left	0.869	54.3	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.484	17.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.765	31.0	C
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	NB Thru	0.000	10.0	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.017	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	26.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	41	503	78	170	567	93	65	347	66	97	427	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	35	76	29	18	95	5	6	15	50	42	14	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	631	115	206	721	108	78	398	123	149	485	194
Peak Hour Factor	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139	0.9139
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	173	31	56	197	30	21	109	34	41	133	53
Total Analysis Volume [veh/h]	88	690	126	225	789	118	85	435	135	163	531	212
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	5	37	37	49	38	38	26	16	16	26	17	17
g / C, Green / Cycle	0.06	0.43	0.43	0.57	0.45	0.45	0.31	0.19	0.19	0.31	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.05	0.22	0.22	0.24	0.24	0.24	0.07	0.16	0.16	0.14	0.15	0.13
s, saturation flow rate [veh/h]	1810	1900	1799	920	1900	1815	1148	1900	1748	1148	3618	1615
c, Capacity [veh/h]	116	814	770	539	856	817	359	363	334	353	717	320
d1, Uniform Delay [s]	39.21	17.87	17.87	10.68	17.03	17.04	22.24	33.04	33.09	23.54	32.10	31.52
k, delay calibration	0.11	0.50	0.50	0.21	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.51	2.33	2.46	1.00	2.46	2.58	0.34	4.50	5.08	0.94	1.52	2.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.52	0.52	0.42	0.54	0.54	0.24	0.82	0.82	0.46	0.74	0.66
d, Delay for Lane Group [s/veh]	48.71	20.20	20.33	11.68	19.49	19.62	22.57	37.54	38.17	24.48	33.62	33.87
Lane Group LOS	D	C	C	B	B	B	C	D	D	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.05	5.98	5.69	1.88	6.49	6.23	1.17	5.91	5.54	2.38	4.94	3.97
50th-Percentile Queue Length [ft/ln]	51.16	149.44	142.25	47.01	162.16	155.80	29.34	147.66	138.49	59.56	123.55	99.13
95th-Percentile Queue Length [veh/ln]	3.68	9.99	9.60	3.38	10.66	10.33	2.11	9.89	9.40	4.29	8.59	7.14
95th-Percentile Queue Length [ft/ln]	92.09	249.68	240.05	84.61	266.58	258.15	52.82	247.30	234.99	107.21	214.70	178.43

Movement, Approach, & Intersection Results

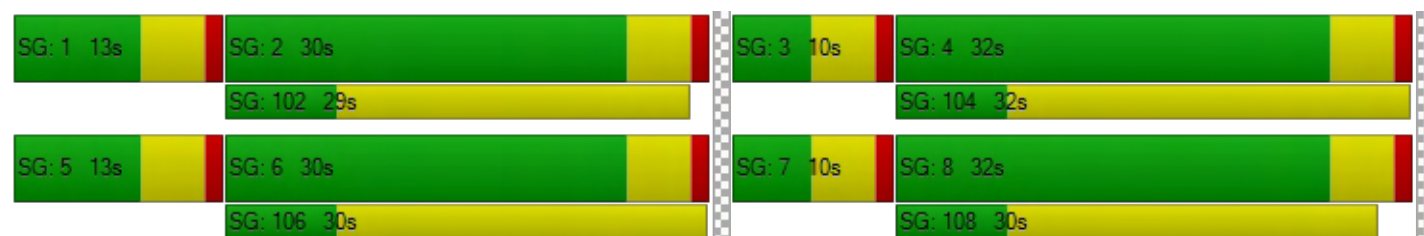
d_M, Delay for Movement [s/veh]	48.71	20.25	20.33	11.68	19.54	19.62	22.57	37.74	38.17	24.48	33.62	33.87
Movement LOS	D	C	C	B	B	B	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	23.03			17.99			35.86			32.03		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	26.05											
Intersection LOS	C											
Intersection V/C	0.641											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.864			2.874			2.704			3.007		
Crosswalk LOS	C			C			B			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.305			2.494			2.100			2.307		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	95.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	111	94	90	28	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	805	838	91	34	33
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	231	241	26	10	9
Total Analysis Volume [veh/h]	110	925	963	105	39	38
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.01	0.01	0.00	0.55	0.08
d_M, Delay for Movement [s/veh]	11.54	0.00	0.00	0.00	95.64	52.10
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh/ln]	0.59	0.00	0.00	0.00	3.23	3.23
95th-Percentile Queue Length [ft/ln]	14.87	0.00	0.00	0.00	80.65	80.65
d_A, Approach Delay [s/veh]	1.23		0.00		74.15	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	3.20					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	31	604	115	65	571	41	35	37	54	23	3	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	187	0	0	115	6	20	6	14	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	854	127	72	745	51	59	47	74	25	7	13
Peak Hour Factor	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591	0.8591
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	249	37	21	217	15	17	14	22	7	2	4
Total Analysis Volume [veh/h]	45	994	148	84	867	59	69	55	86	29	8	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	27	0	13	28	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	39	39	4	40	40	12	12	12
g / C, Green / Cycle	0.04	0.55	0.55	0.06	0.57	0.57	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.02	0.31	0.31	0.05	0.25	0.25	0.15	0.04	0.01
s, saturation flow rate [veh/h]	1810	1900	1815	1810	1900	1858	1444	1025	1615
c, Capacity [veh/h]	76	1046	1000	110	1081	1057	320	271	282
d1, Uniform Delay [s]	32.95	10.20	10.21	32.40	8.62	8.62	28.26	24.46	24.09
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.08	2.15	2.26	10.54	1.26	1.29	2.28	0.23	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.56	0.56	0.77	0.43	0.43	0.66	0.14	0.05
d, Delay for Lane Group [s/veh]	40.03	12.35	12.47	42.95	9.89	9.92	30.53	24.69	24.16
Lane Group LOS	D	B	B	D	A	A	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.86	5.18	4.99	1.64	3.52	3.45	3.36	0.50	0.20
50th-Percentile Queue Length [ft/ln]	21.40	129.39	124.71	40.92	87.88	86.14	83.90	12.51	4.96
95th-Percentile Queue Length [veh/ln]	1.54	8.91	8.65	2.95	6.33	6.20	6.04	0.90	0.36
95th-Percentile Queue Length [ft/ln]	38.51	222.66	216.28	73.66	158.19	155.05	151.02	22.51	8.93

Movement, Approach, & Intersection Results

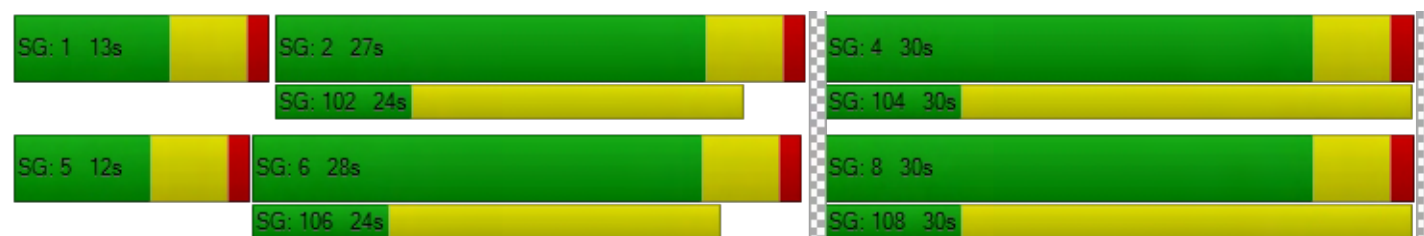
d_M, Delay for Movement [s/veh]	40.03	12.40	12.47	42.95	9.90	9.92	30.53	30.53	30.53	24.69	24.69	24.16
Movement LOS	D	B	B	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	13.45			12.65			30.53			24.54		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	14.82											
Intersection LOS	B											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.950			2.990			1.910			2.073		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	629			657			714			714		
d_b, Bicycle Delay [s]	16.46			15.78			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.539			2.393			1.906			1.645		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	54.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	117	5	3	118	8	61	32	16	23	6	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	703	75	124	688	46	137	226	63	47	212	166
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	204	22	36	200	13	40	66	18	14	62	48
Total Analysis Volume [veh/h]	44	817	87	144	799	53	159	263	73	55	246	193
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	40	0	15	40	0	0	35	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	35	35	10	41	41	34	21	21
g / C, Green / Cycle	0.03	0.29	0.29	0.08	0.34	0.34	0.28	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.24	0.24	0.08	0.23	0.23	0.27	0.16	0.12
s, saturation flow rate [veh/h]	1810	1900	1837	1810	1900	1859	1823	1883	1615
c, Capacity [veh/h]	58	556	537	151	653	639	509	335	287
d1, Uniform Delay [s]	57.60	39.61	39.61	54.77	33.41	33.41	42.79	48.27	46.06
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.41	0.17	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.55	13.21	13.60	24.34	5.16	5.27	30.03	12.77	2.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.83	0.83	0.95	0.66	0.66	0.97	0.90	0.67
d, Delay for Lane Group [s/veh]	75.15	52.81	53.21	79.10	38.57	38.68	72.81	61.04	48.77
Lane Group LOS	E	D	D	E	D	D	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.61	14.60	14.17	5.28	11.27	11.04	18.29	9.81	5.49
50th-Percentile Queue Length [ft/ln]	40.24	364.94	354.25	131.99	281.64	276.02	457.30	245.28	137.31
95th-Percentile Queue Length [veh/ln]	2.90	20.86	20.34	9.05	16.77	16.49	25.31	14.95	9.34
95th-Percentile Queue Length [ft/ln]	72.43	521.59	508.59	226.19	419.25	412.25	632.65	373.71	233.40

Movement, Approach, & Intersection Results

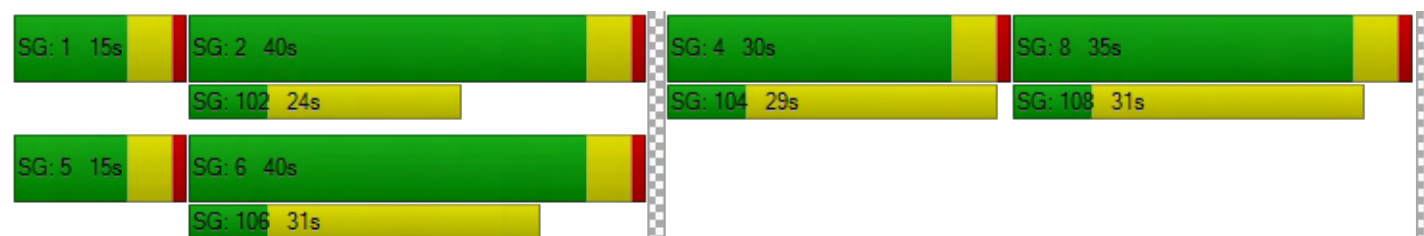
d_M, Delay for Movement [s/veh]	75.15	52.99	53.21	79.10	38.62	38.68	72.81	72.81	72.81	61.04	61.04	48.77
Movement LOS	E	D	D	E	D	D	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	54.04			44.47			72.81			56.25		
Approach LOS	D			D			E			E		
d_I, Intersection Delay [s/veh]	54.33											
Intersection LOS	D											
Intersection V/C	0.869											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.771			2.936			2.273			2.382		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	583			583			500			417		
d_b, Bicycle Delay [s]	30.10			30.10			33.75			37.60		
I_b,int, Bicycle LOS Score for Intersection	2.342			2.381			2.376			2.375		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.484

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	19	488	17	52	497	65	71	101	48	12	46	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	196	1	1	198	1	4	1	7	5	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	735	20	58	747	73	82	113	60	18	51	37
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	215	6	17	218	21	24	33	18	5	15	11
Total Analysis Volume [veh/h]	26	859	23	68	873	85	96	132	70	21	60	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	29	0	15	29	0	10	31	0	10	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	47	47	4	49	49	19	12	19	9	9
g / C, Green / Cycle	0.03	0.55	0.55	0.05	0.57	0.57	0.22	0.14	0.22	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.01	0.23	0.23	0.04	0.24	0.05	0.06	0.11	0.02	0.03	0.03
s, saturation flow rate [veh/h]	1810	1900	1883	1810	3618	1615	1553	1791	1362	1900	1615
c, Capacity [veh/h]	52	1045	1035	91	2068	923	440	252	304	200	170
d1, Uniform Delay [s]	40.80	11.26	11.26	39.92	10.30	8.25	27.15	35.48	26.47	35.23	35.05
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.40	1.26	1.27	11.33	0.63	0.20	0.25	5.91	0.10	0.83	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.42	0.42	0.74	0.42	0.09	0.22	0.80	0.07	0.30	0.25
d, Delay for Lane Group [s/veh]	48.20	12.52	12.53	51.24	10.93	8.45	27.39	41.39	26.57	36.06	35.82
Lane Group LOS	D	B	B	D	B	A	C	D	C	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.62	4.56	4.52	1.64	4.06	0.66	1.60	4.39	0.34	1.18	0.84
50th-Percentile Queue Length [ft/ln]	15.61	114.04	113.08	40.97	101.55	16.39	40.03	109.65	8.43	29.48	21.11
95th-Percentile Queue Length [veh/ln]	1.12	8.06	8.01	2.95	7.31	1.18	2.88	7.82	0.61	2.12	1.52
95th-Percentile Queue Length [ft/ln]	28.10	201.60	200.28	73.74	182.79	29.51	72.06	195.52	15.18	53.07	38.00

Movement, Approach, & Intersection Results

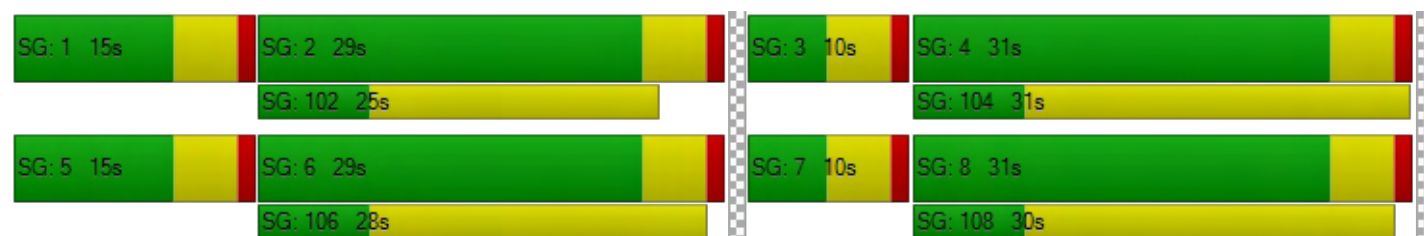
d_M, Delay for Movement [s/veh]	48.20	12.53	12.53	51.24	10.93	8.45	27.39	41.39	41.39	26.57	36.06	35.82
Movement LOS	D	B	B	D	B	A	C	D	D	C	D	D
d_A, Approach Delay [s/veh]	13.55			13.40			36.88			34.37		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	17.53											
Intersection LOS	B											
Intersection V/C	0.484											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.860			2.984			2.089			2.212		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	565			565			612			612		
d_b, Bicycle Delay [s]	21.89			21.89			20.48			20.48		
I_b,int, Bicycle LOS Score for Intersection	2.309			2.406			2.051			1.764		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report
Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	31.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	82	16	46	78	86	75	39	46	20	51	41
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	471	84	153	389	179	173	805	84	69	900	92
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	135	24	44	112	51	50	231	24	20	259	26
Total Analysis Volume [veh/h]	85	541	97	176	447	206	199	925	97	79	1034	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	28	28	28	28	28	28	11	32	32	5	26	26
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.35	0.13	0.40	0.40	0.06	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.17	0.17	0.22	0.24	0.13	0.11	0.27	0.27	0.04	0.30	0.31
s, saturation flow rate [veh/h]	958	1900	1801	803	1900	1615	1810	1900	1837	1810	1900	1839
c, Capacity [veh/h]	223	671	636	252	671	570	238	764	739	104	623	603
d1, Uniform Delay [s]	32.54	20.23	20.24	32.56	21.90	19.19	33.92	19.69	19.70	37.19	26.00	26.02
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.19	0.19	0.11	0.30	0.30
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.87	2.52	2.68	14.83	5.17	1.77	7.56	1.85	1.93	10.87	15.15	15.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.49	0.49	0.70	0.67	0.36	0.84	0.68	0.68	0.76	0.93	0.93
d, Delay for Lane Group [s/veh]	37.41	22.75	22.92	47.39	27.07	20.97	41.48	21.53	21.64	48.06	41.15	41.84
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.78	4.84	4.63	4.29	7.43	2.89	4.12	7.64	7.43	1.79	12.45	12.19
50th-Percentile Queue Length [ft/ln]	44.43	120.94	115.75	107.22	185.70	72.30	103.05	191.10	185.77	44.70	311.19	304.65
95th-Percentile Queue Length [veh/ln]	3.20	8.44	8.16	7.69	11.90	5.21	7.42	12.18	11.90	3.22	18.23	17.91
95th-Percentile Queue Length [ft/ln]	79.98	211.12	203.97	192.13	297.44	130.14	185.50	304.46	297.53	80.46	455.85	447.78

Movement, Approach, & Intersection Results

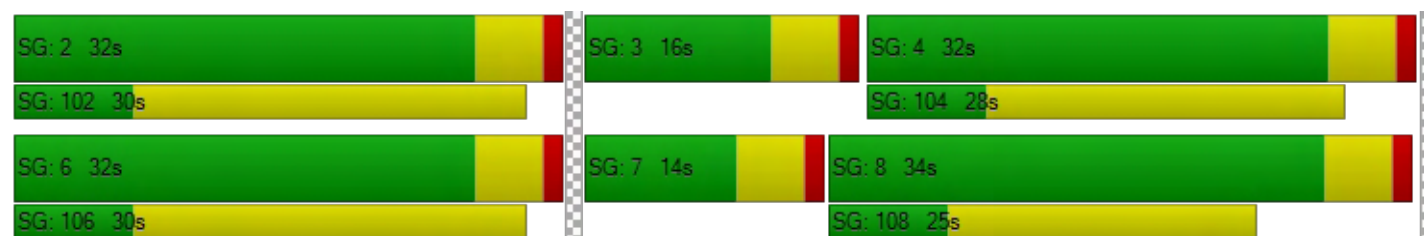
d_M, Delay for Movement [s/veh]	37.41	22.81	22.92	47.39	27.07	20.97	41.48	21.58	21.64	48.06	41.45	41.84
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	24.54			29.87			24.83			41.91		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.04											
Intersection LOS	C											
Intersection V/C	0.765											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.562			2.809			2.993			3.093		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.156			2.927			2.567			2.565		
Bicycle LOS	B			C			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	43	0	0	0	0	0	0	0	148
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	43	0	0	0	11	0	0	1	148
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	0	0	3	0	0	0	40
Total Analysis Volume [veh/h]	0	0	0	47	0	0	0	12	0	0	1	161
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.02	9.98	8.35	9.25	9.72	8.88	7.52	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	4.15	4.15	4.15	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.12			9.25			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.97											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	1	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	0	0	43	148	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	0	0	54	149	38
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	0	0	15	40	10
Total Analysis Volume [veh/h]	13	0	0	59	162	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.88	9.25	7.61	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.32	1.32	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.88		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	A					

S2A Modular Manufacturing

Vistro File: G:\...\IPM.vistro

Scenario 4 Opening Year (Phase2) with Project

Report File: G:\...\IPMOY2p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.878	38.9	D
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	1.463	439.4	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.657	15.0	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	EB Thru	1.045	106.5	F
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.591	17.9	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	SB Left	0.984	53.6	D
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.8	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.062	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: State Street / Esplanade Avenue

Control Type:	Signalized	Delay (sec / veh):	38.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.878

Intersection Setup

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Esplanade Ave			Esplanade Ave		
Base Volume Input [veh/h]	90	571	166	214	636	93	110	498	84	122	498	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	70	144	56	10	130	14	14	16	54	46	17	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	169	774	239	246	832	117	135	566	147	181	567	170
Peak Hour Factor	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857	0.8857
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	218	67	69	235	33	38	160	41	51	160	48
Total Analysis Volume [veh/h]	191	874	270	278	939	132	152	639	166	204	640	192
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	30	0	13	30	0	11	32	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	22	0	0	23	0	0	23	0	0	25	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	8	30	30	43	30	30	33	22	22	33	22	22
g / C, Green / Cycle	0.09	0.35	0.35	0.50	0.35	0.35	0.38	0.25	0.25	0.38	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.11	0.31	0.32	0.33	0.29	0.29	0.14	0.22	0.22	0.20	0.18	0.12
s, saturation flow rate [veh/h]	1810	1900	1749	842	1900	1819	1085	1900	1767	1003	3618	1615
c, Capacity [veh/h]	173	658	606	400	658	630	402	478	444	360	910	406
d1, Uniform Delay [s]	38.63	26.53	26.67	18.01	25.61	25.67	19.37	30.66	30.66	21.14	29.07	27.15
k, delay calibration	0.11	0.50	0.50	0.39	0.50	0.50	0.11	0.16	0.16	0.13	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	63.99	17.76	20.19	7.49	11.54	12.35	0.59	7.39	7.89	1.68	1.01	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.10	0.90	0.91	0.69	0.83	0.83	0.38	0.87	0.87	0.57	0.70	0.47
d, Delay for Lane Group [s/veh]	102.62	44.29	46.85	25.50	37.15	38.02	19.96	38.05	38.55	22.82	30.07	28.01
Lane Group LOS	F	D	D	C	D	D	B	D	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.54	13.70	13.17	3.63	11.39	11.13	1.90	8.53	7.99	2.71	5.62	3.17
50th-Percentile Queue Length [ft/ln]	163.47	342.41	329.28	90.63	284.85	278.29	47.45	213.28	199.85	67.67	140.47	79.36
95th-Percentile Queue Length [veh/ln]	11.11	19.77	19.12	6.53	16.93	16.60	3.42	13.32	12.63	4.87	9.51	5.71
95th-Percentile Queue Length [ft/ln]	277.80	494.14	478.08	163.13	423.24	415.08	85.41	333.03	315.77	121.80	237.65	142.85

Movement, Approach, & Intersection Results

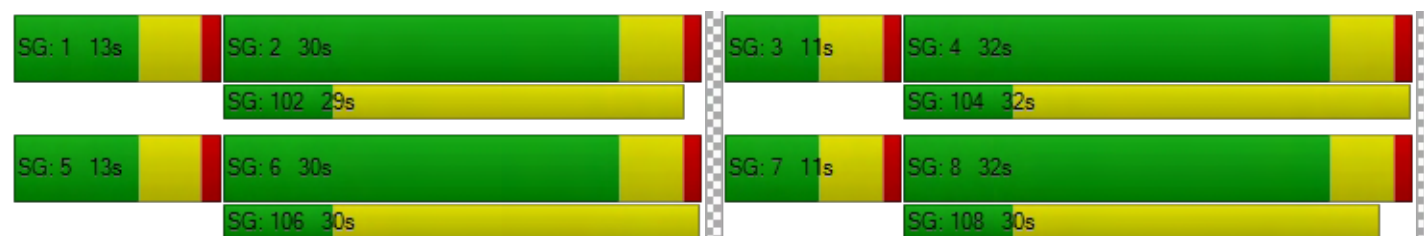
d_M, Delay for Movement [s/veh]	102.62	45.12	46.85	25.50	37.52	38.02	19.96	38.22	38.55	22.82	30.07	28.01
Movement LOS	F	D	D	C	D	D	B	D	D	C	C	C
d_A, Approach Delay [s/veh]	53.69			35.09			35.38			28.26		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	38.95											
Intersection LOS	D											
Intersection V/C	0.878											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	3.064			3.024			2.858			3.137		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			588			635			635		
d_b, Bicycle Delay [s]	21.18			21.18			19.79			19.79		
I_b,int, Bicycle LOS Score for Intersection	2.661			2.673			2.349			2.414		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	439.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.463

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	193	195	32	72	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	1096	1086	39	78	85
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	299	297	11	21	23
Total Analysis Volume [veh/h]	44	1197	1186	43	85	93
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.01	0.01	0.00	1.46	0.21
d_M, Delay for Movement [s/veh]	11.79	0.00	0.00	0.00	439.38	385.58
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh/ln]	0.25	0.00	0.00	0.00	13.80	13.80
95th-Percentile Queue Length [ft/ln]	6.20	0.00	0.00	0.00	345.08	345.08
d_A, Approach Delay [s/veh]	0.42		0.00		411.27	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	27.84					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: State Street / Fruitvale Avenue

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Fruitvale Ave			Fruitvale Ave		
Base Volume Input [veh/h]	50	741	23	14	764	44	45	0	49	43	27	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	216	0	0	253	21	13	11	9	0	13	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	1034	25	15	1097	70	63	11	63	47	43	29
Peak Hour Factor	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778	0.8778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	294	7	4	312	20	18	3	18	13	12	8
Total Analysis Volume [veh/h]	80	1178	28	17	1250	80	72	13	72	54	49	33
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	12	30	0	10	28	0	0	30	0	0	30	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	17	0	0	23	0	0	23	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	41	41	1	39	39	12	12	12
g / C, Green / Cycle	0.06	0.59	0.59	0.02	0.55	0.55	0.18	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.04	0.32	0.32	0.01	0.35	0.35	0.15	0.07	0.02
s, saturation flow rate [veh/h]	1810	1900	1885	1810	1900	1860	1075	1416	1615
c, Capacity [veh/h]	105	1118	1109	38	1048	1026	265	328	285
d1, Uniform Delay [s]	32.52	8.71	8.71	33.90	10.90	10.92	28.54	25.25	24.25
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.74	1.88	1.90	8.01	3.01	3.10	2.12	0.54	0.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.54	0.54	0.45	0.64	0.64	0.59	0.31	0.12
d, Delay for Lane Group [s/veh]	43.26	10.59	10.62	41.91	13.91	14.02	30.65	25.79	24.43
Lane Group LOS	D	B	B	D	B	B	C	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.57	4.73	4.70	0.35	6.46	6.38	2.55	1.44	0.44
50th-Percentile Queue Length [ft/ln]	39.21	118.22	117.53	8.86	161.59	159.49	63.78	36.02	11.03
95th-Percentile Queue Length [veh/ln]	2.82	8.30	8.26	0.64	10.63	10.52	4.59	2.59	0.79
95th-Percentile Queue Length [ft/ln]	70.58	207.38	206.43	15.94	265.82	263.05	114.80	64.84	19.86

Movement, Approach, & Intersection Results

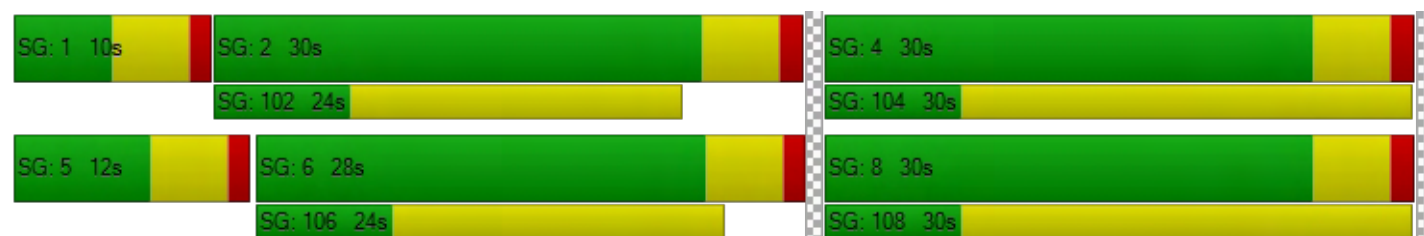
d_M, Delay for Movement [s/veh]	43.26	10.60	10.62	41.91	13.96	14.02	30.65	30.65	30.65	25.79	25.79	24.43
Movement LOS	D	B	B	D	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	12.64			14.32			30.65			25.46		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	14.97											
Intersection LOS	B											
Intersection V/C	0.657											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	3.093			3.111			1.939			2.010		
Crosswalk LOS	C			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	714			657			714			714		
d_b, Bicycle Delay [s]	14.46			15.78			14.46			14.46		
I_b,int, Bicycle LOS Score for Intersection	2.621			2.671			1.819			1.784		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	106.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.045

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	131	6	16	222	24	93	57	17	55	9	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	807	90	156	988	132	163	331	53	112	254	131
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	222	25	43	272	36	45	91	15	31	70	36
Total Analysis Volume [veh/h]	55	889	99	172	1088	145	180	365	58	123	280	144
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	13	40	0	16	43	0	0	38	0	0	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	5	30	30	11	36	36	33	26	26
g / C, Green / Cycle	0.04	0.25	0.25	0.09	0.30	0.30	0.27	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.26	0.10	0.33	0.33	0.33	0.22	0.09
s, saturation flow rate [veh/h]	1810	1900	1834	1810	1900	1823	1841	1871	1615
c, Capacity [veh/h]	73	477	460	167	575	552	504	405	350
d1, Uniform Delay [s]	57.04	44.98	44.98	54.50	41.85	41.85	43.61	46.95	40.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.50	0.33	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.59	56.36	57.15	40.49	64.05	67.81	106.53	34.88	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	1.05	1.05	1.03	1.09	1.10	1.20	0.99	0.41
d, Delay for Lane Group [s/veh]	71.63	101.34	102.12	94.99	105.90	109.66	150.14	81.83	41.22
Lane Group LOS	E	F	F	F	F	F	F	F	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.95	21.53	20.88	6.83	26.68	26.17	29.39	15.63	3.68
50th-Percentile Queue Length [ft/ln]	48.69	538.24	522.04	170.74	666.96	654.37	734.64	390.73	91.93
95th-Percentile Queue Length [veh/ln]	3.51	30.09	29.30	11.24	37.13	36.68	42.49	22.11	6.62
95th-Percentile Queue Length [ft/ln]	87.64	752.30	732.58	281.01	928.32	917.12	1062.19	552.82	165.47

Movement, Approach, & Intersection Results

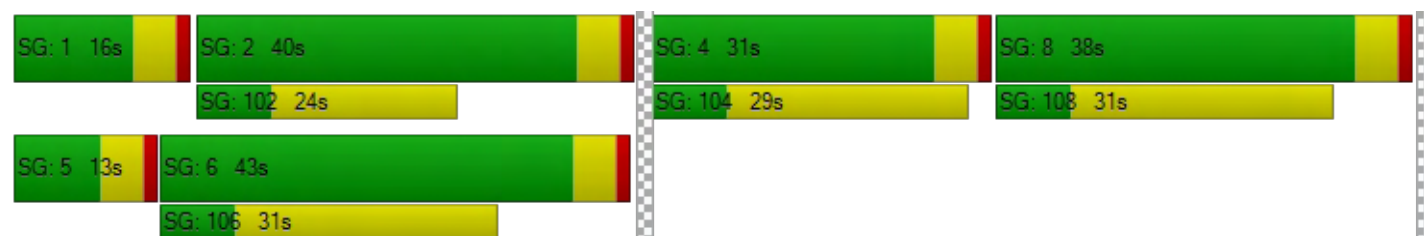
d_M, Delay for Movement [s/veh]	71.63	101.68	102.12	94.99	107.49	109.66	150.14	150.14	150.14	81.83	81.83	41.22
Movement LOS	E	F	F	F	F	F	F	F	F	F	F	D
d_A, Approach Delay [s/veh]	100.14			106.19			150.14			71.14		
Approach LOS	F			F			F			E		
d_I, Intersection Delay [s/veh]	106.47											
Intersection LOS	F											
Intersection V/C	1.045											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	2.842			3.034			2.433			2.467		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	583			633			550			433		
d_b, Bicycle Delay [s]	30.10			28.02			31.54			36.82		
I_b,int, Bicycle LOS Score for Intersection	2.420			2.719			2.555			2.462		
Bicycle LOS	B			B			B			B		

Sequence

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



Intersection Level Of Service Report
Intersection 5: State Street / Devonshire Avenue

Control Type:	Signalized	Delay (sec / veh):	17.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.591

Intersection Setup

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Devonshire Ave			Devonshire Ave		
Base Volume Input [veh/h]	47	620	7	40	655	71	83	100	62	5	74	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	13	330	11	4	330	5	2	1	10	8	1	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	65	1015	19	48	1053	83	94	111	78	14	83	40
Peak Hour Factor	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457	0.9457
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	268	5	13	278	22	25	29	21	4	22	11
Total Analysis Volume [veh/h]	69	1073	20	51	1113	88	99	117	82	15	88	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	33	0	15	33	0	15	31	0	15	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	23	0	0	24	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	4	40	40	3	39	39	17	11	17	7	7
g / C, Green / Cycle	0.05	0.53	0.53	0.04	0.52	0.52	0.23	0.14	0.23	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.04	0.29	0.29	0.03	0.31	0.05	0.06	0.11	0.01	0.05	0.03
s, saturation flow rate [veh/h]	1810	1900	1888	1810	3618	1615	1548	1771	1358	1900	1615
c, Capacity [veh/h]	94	1002	996	81	1882	840	444	253	327	186	158
d1, Uniform Delay [s]	35.11	11.79	11.80	35.28	12.49	9.15	23.72	31.08	22.98	32.05	31.38
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.64	2.15	2.16	7.91	1.37	0.25	0.25	5.33	0.06	1.86	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.55	0.55	0.63	0.59	0.10	0.22	0.79	0.05	0.47	0.27
d, Delay for Lane Group [s/veh]	45.75	13.94	13.96	43.20	13.87	9.40	23.98	36.41	23.03	33.90	32.26
Lane Group LOS	D	B	B	D	B	A	C	D	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.46	5.60	5.57	1.05	5.70	0.68	1.42	3.74	0.21	1.57	0.73
50th-Percentile Queue Length [ft/ln]	36.41	140.01	139.25	26.20	142.47	16.92	35.40	93.41	5.13	39.16	18.15
95th-Percentile Queue Length [veh/ln]	2.62	9.48	9.44	1.89	9.61	1.22	2.55	6.73	0.37	2.82	1.31
95th-Percentile Queue Length [ft/ln]	65.54	237.04	236.02	47.16	240.35	30.45	63.71	168.15	9.23	70.49	32.67

Movement, Approach, & Intersection Results

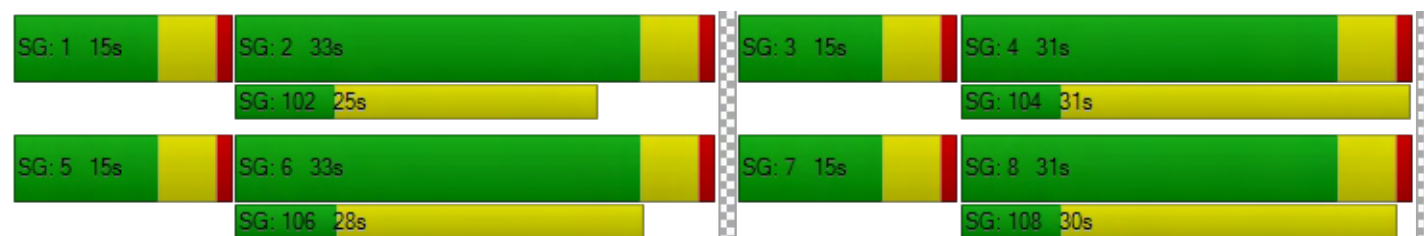
d_M, Delay for Movement [s/veh]	45.75	13.95	13.96	43.20	13.87	9.40	23.98	36.41	36.41	23.03	33.90	32.26
Movement LOS	D	B	B	D	B	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	15.84			14.75			32.28			32.30		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	17.91											
Intersection LOS	B											
Intersection V/C	0.591											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	27.31			27.31			27.31			27.31		
I_p,int, Pedestrian LOS Score for Intersection	2.960			3.059			2.107			2.202		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	747			747			693			693		
d_b, Bicycle Delay [s]	14.73			14.73			16.01			16.01		
I_b,int, Bicycle LOS Score for Intersection	2.518			2.593			2.051			1.799		
Bicycle LOS	B			B			B			A		

Sequence

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



Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	53.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.984

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	140	43	80	138	130	135	60	76	37	55	79
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	526	125	241	502	321	283	1241	140	142	1184	168
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	144	34	66	137	88	77	339	38	39	324	46
Total Analysis Volume [veh/h]	160	575	137	264	549	351	310	1357	153	155	1295	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	43	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	48	38	38	48	36	36
g / C, Green / Cycle	0.36	0.36	0.36	0.36	0.36	0.36	0.53	0.42	0.42	0.53	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.18	0.19	0.19	0.35	0.29	0.22	0.47	0.40	0.41	0.26	0.39	0.40
s, saturation flow rate [veh/h]	872	1900	1775	750	1900	1615	665	1900	1834	596	1900	1819
c, Capacity [veh/h]	149	678	633	218	678	576	331	800	772	294	757	725
d1, Uniform Delay [s]	43.37	23.09	23.09	39.74	26.18	23.79	29.12	25.11	25.57	19.47	26.84	27.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.40	0.42	0.19	0.43	0.44
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	95.94	3.10	3.32	129.15	10.11	4.74	35.92	18.51	24.04	2.51	27.47	33.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.08	0.54	0.54	1.21	0.81	0.61	0.94	0.95	0.97	0.53	0.99	1.01
d, Delay for Lane Group [s/veh]	139.31	26.19	26.42	168.90	36.29	28.53	65.04	43.62	49.61	21.98	54.32	60.39
Lane Group LOS	F	C	C	F	D	C	E	D	D	C	D	F
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.18	6.41	6.03	12.56	11.75	6.48	6.51	18.44	19.61	1.66	20.48	21.07
50th-Percentile Queue Length [ft/ln]	179.41	160.15	150.72	313.91	293.84	162.00	162.65	460.89	490.36	41.47	511.94	526.87
95th-Percentile Queue Length [veh/ln]	12.06	10.56	10.06	20.44	17.38	10.65	10.69	25.48	26.88	2.99	27.90	28.76
95th-Percentile Queue Length [ft/ln]	301.57	263.93	251.40	510.88	434.40	266.36	267.22	636.93	671.94	74.64	697.47	719.05

Movement, Approach, & Intersection Results

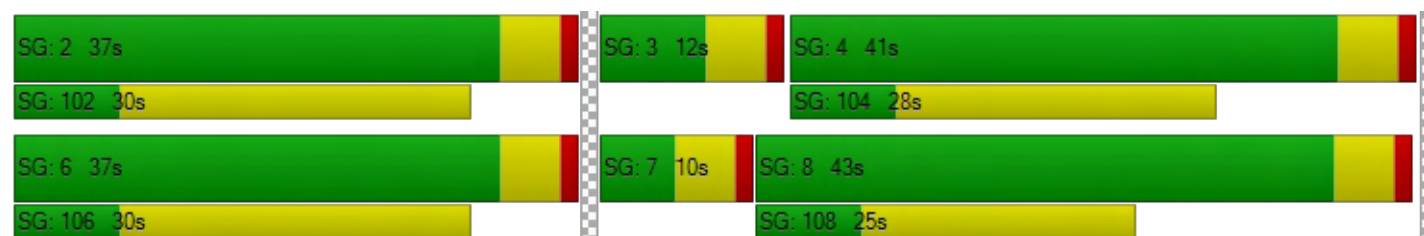
d_M, Delay for Movement [s/veh]	139.31	26.27	26.42	168.90	36.29	28.53	65.04	46.27	49.61	21.98	56.88	60.39
Movement LOS	F	C	C	F	D	C	E	D	D	C	E	E
d_A, Approach Delay [s/veh]	47.04			64.02			49.75			53.96		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	53.60											
Intersection LOS	D											
Intersection V/C	0.984											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.790			3.122			3.352			3.447		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			844			800		
d_b, Bicycle Delay [s]	18.69			18.69			15.02			16.20		
I_b,int, Bicycle LOS Score for Intersection	2.279			3.480			3.061			2.908		
Bicycle LOS	B			C			C			C		

Sequence

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



Intersection Level Of Service Report
Intersection 7: Project West Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Project West Access			Project West Access			Crows Nest PI			Crows Nest PI		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	10	0	0	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	106	0	0	0	0	0	0	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	106	0	0	0	11	0	0	11	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	29	0	0	0	3	0	0	3	13
Total Analysis Volume [veh/h]	0	0	0	115	0	0	0	12	0	0	12	52
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.77	9.40	8.35	9.29	9.77	8.98	7.32	0.00	0.00	7.22	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.41	0.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	10.23	10.23	10.23	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.84			9.29			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.59											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 8: Project East Access at Crows Nest PI

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project East Access		Crows Nest PI		Crows Nest PI	
Base Volume Input [veh/h]	0	0	0	10	10	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	106	48	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	45	0	0	117	59	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	0	0	32	16	5
Total Analysis Volume [veh/h]	49	0	0	127	64	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.85	8.93	7.36	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.94	4.94	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.85		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.84					
Intersection LOS	A					

**EXISTING PLUS PROJECT
WITH IMPROVEMENTS**

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Report File: G:\...\AMEp_IMPRV.pdf

S2A Modular Manufacturing

Scenario 2 Existing Plus Project
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	EB Left	0.424	8.2	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PIControl Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutesDelay (sec / veh): 8.2
Level Of Service: A
Volume to Capacity (v/c): 0.424**Intersection Setup**

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	0	0	90	28	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	629	674	91	33	32
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	181	194	26	9	9
Total Analysis Volume [veh/h]	110	723	775	105	38	37
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	10	30	20	0	35	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	65	65	65	65	65
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	5	51	41	41	4
g / C, Green / Cycle	0.08	0.79	0.63	0.63	0.06
(v / s)_i Volume / Saturation Flow Rate	0.06	0.20	0.23	0.24	0.04
s, saturation flow rate [veh/h]	1810	3618	1900	1823	1708
c, Capacity [veh/h]	142	2849	1202	1153	101
d1, Uniform Delay [s]	29.47	1.84	5.72	5.80	30.17
k, delay calibration	0.11	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.80	0.21	0.86	0.96	10.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.25	0.37	0.38	0.74
d, Delay for Lane Group [s/veh]	38.27	2.05	6.59	6.76	40.49
Lane Group LOS	D	A	A	A	D
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	1.91	0.31	2.17	2.21	1.40
50th-Percentile Queue Length [ft/ln]	47.70	7.65	54.16	55.25	34.96
95th-Percentile Queue Length [veh/ln]	3.43	0.55	3.90	3.98	2.52
95th-Percentile Queue Length [ft/ln]	85.86	13.78	97.50	99.46	62.92

Movement, Approach, & Intersection Results

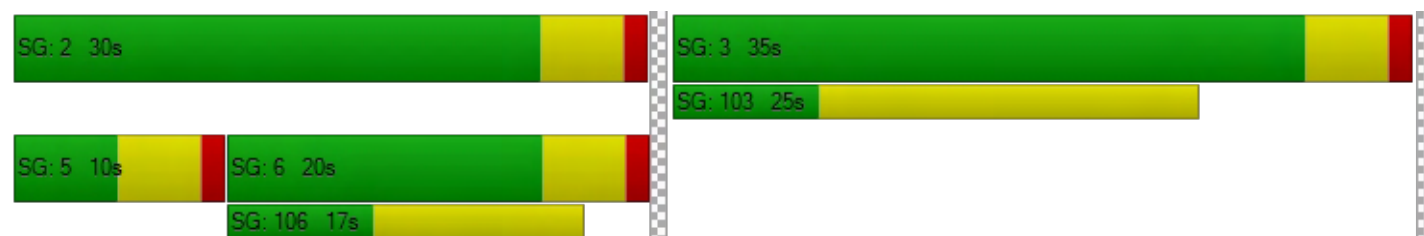
d_M, Delay for Movement [s/veh]	38.27	2.05	6.66	6.76	40.49	40.49
Movement LOS	D	A	A	A	D	D
d_A, Approach Delay [s/veh]	6.84		6.67		40.49	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.17					
Intersection LOS	A					
Intersection V/C	0.424					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	0.00	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.791	0.000	1.838
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	32.50	32.50	32.50
I_b,int, Bicycle LOS Score for Intersection	4.820	4.858	4.256
Bicycle LOS	E	E	E

Sequence

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



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S2A Modular Manufacturing

Scenario 2 Existing Plus Project
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	NB Left	0.452	14.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PIControl Type: Signalized
Analysis Method: HCM 6th Edition
Analysis Period: 15 minutesDelay (sec / veh): 14.9
Level Of Service: B
Volume to Capacity (v/c): 0.452**Intersection Setup**

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	0	32	72	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	818	807	38	77	84
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	223	220	10	21	23
Total Analysis Volume [veh/h]	44	894	882	42	84	92
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	10	45	35	0	25	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		Yes	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	5	40	30	30	20
g / C, Green / Cycle	0.07	0.57	0.43	0.43	0.29
(v / s)_i Volume / Saturation Flow Rate	0.02	0.25	0.24	0.25	0.10
s, saturation flow rate [veh/h]	1810	3618	1900	1870	1702
c, Capacity [veh/h]	129	2067	814	801	486
d1, Uniform Delay [s]	30.93	8.54	15.10	15.18	19.92
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.02	0.66	2.86	3.01	2.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.34	0.43	0.57	0.58	0.36
d, Delay for Lane Group [s/veh]	37.95	9.20	17.96	18.19	22.00
Lane Group LOS	D	A	B	B	C
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.92	3.16	5.39	5.44	2.44
50th-Percentile Queue Length [ft/ln]	22.90	78.90	134.78	135.99	61.04
95th-Percentile Queue Length [veh/ln]	1.65	5.68	9.20	9.26	4.39
95th-Percentile Queue Length [ft/ln]	41.21	142.02	229.98	231.62	109.87

Movement, Approach, & Intersection Results

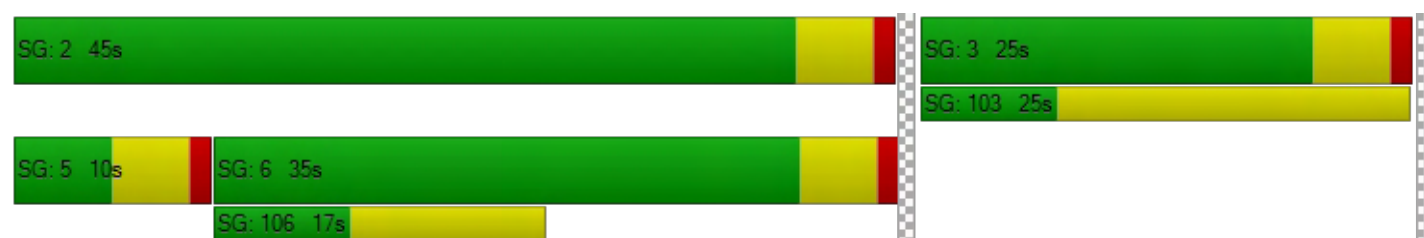
d_M, Delay for Movement [s/veh]	37.95	9.20	18.07	18.19	22.00	22.00
Movement LOS	D	A	B	B	C	C
d_A, Approach Delay [s/veh]	10.55		18.07		22.00	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	14.95					
Intersection LOS	B					
Intersection V/C	0.452					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.86	0.00	24.86
I_p,int, Pedestrian LOS Score for Intersection	2.853	0.000	1.829
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	35.00	35.00	35.00
I_b,int, Bicycle LOS Score for Intersection	4.906	4.895	4.423
Bicycle LOS	E	E	E

Sequence

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



**OPENING YEAR (2021) PLUS PROJECT (EAGP)
WITH IMPROVEMENTS**

S2A Modular Manufacturing

Vistro File: G:\...\AM_IMPRV.vistro

Scenario 8 Opening Year (Phase1) (EAGp)

Report File: G:\...\AMEAG1p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	EB Right	0.345	5.4	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	5.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.345

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	0	0	40	14	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	654	701	41	19	20
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	188	201	12	5	6
Total Analysis Volume [veh/h]	48	752	806	47	22	23
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	10	30	20	0	35	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	65	65	65	65	65
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	52	44	44	3
g / C, Green / Cycle	0.05	0.80	0.68	0.68	0.04
(v / s)_i Volume / Saturation Flow Rate	0.03	0.21	0.22	0.23	0.03
s, saturation flow rate [veh/h]	1810	3618	1900	1864	1705
c, Capacity [veh/h]	84	2900	1289	1264	76
d1, Uniform Delay [s]	30.42	1.62	4.34	4.37	30.53
k, delay calibration	0.11	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	0.22	0.69	0.72	7.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.26	0.33	0.34	0.59
d, Delay for Lane Group [s/veh]	36.35	1.83	5.03	5.09	37.59
Lane Group LOS	D	A	A	A	D
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.82	0.20	1.59	1.61	0.82
50th-Percentile Queue Length [ft/ln]	20.62	4.94	39.79	40.16	20.38
95th-Percentile Queue Length [veh/ln]	1.48	0.36	2.86	2.89	1.47
95th-Percentile Queue Length [ft/ln]	37.12	8.89	71.62	72.29	36.68

Movement, Approach, & Intersection Results

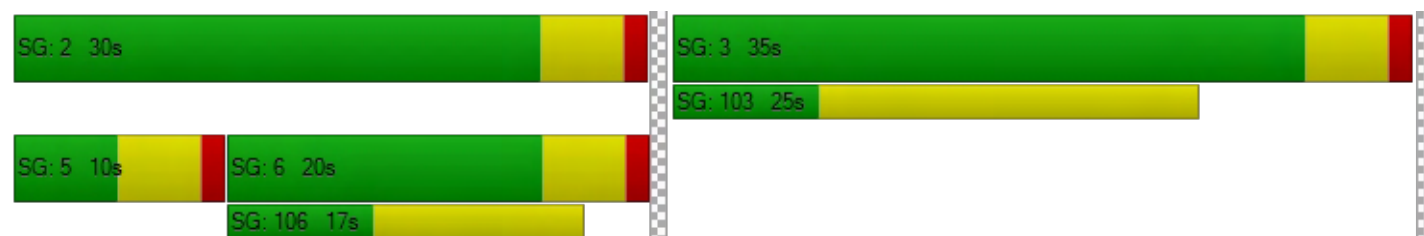
d_M, Delay for Movement [s/veh]	36.35	1.83	5.06	5.09	37.59	37.59
Movement LOS	D	A	A	A	D	D
d_A, Approach Delay [s/veh]	3.90		5.06		37.59	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	5.38					
Intersection LOS	A					
Intersection V/C	0.345					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	22.43	0.00	22.43
I_p,int, Pedestrian LOS Score for Intersection	2.788	0.000	1.765
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	32.50	32.50	32.50
I_b,int, Bicycle LOS Score for Intersection	4.792	4.836	4.207
Bicycle LOS	E	E	D

Sequence

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



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Scenario 8 Opening Year (Phase1) (EAGp)

Report File: G:\...\PMEAG1p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest PI	Signalized	HCM 6th Edition	NB Left	0.364	17.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.364

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	0	0	15	32	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	851	840	21	37	41
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	232	229	6	10	11
Total Analysis Volume [veh/h]	24	930	918	23	40	45
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	15	55	40	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		Yes	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	10	50	35	35	25
g / C, Green / Cycle	0.12	0.59	0.41	0.41	0.29
(v / s)_i Volume / Saturation Flow Rate	0.01	0.26	0.25	0.25	0.05
s, saturation flow rate [veh/h]	1810	3618	1900	1884	1701
c, Capacity [veh/h]	213	2128	782	776	500
d1, Uniform Delay [s]	33.53	9.70	19.55	19.60	22.29
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.07	0.65	3.41	3.51	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.44	0.60	0.61	0.17
d, Delay for Lane Group [s/veh]	34.60	10.35	22.95	23.11	23.03
Lane Group LOS	C	B	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.49	4.19	7.34	7.37	1.34
50th-Percentile Queue Length [ft/ln]	12.22	104.74	183.46	184.32	33.38
95th-Percentile Queue Length [veh/ln]	0.88	7.54	11.78	11.83	2.40
95th-Percentile Queue Length [ft/ln]	22.00	188.54	294.53	295.65	60.09

Movement, Approach, & Intersection Results

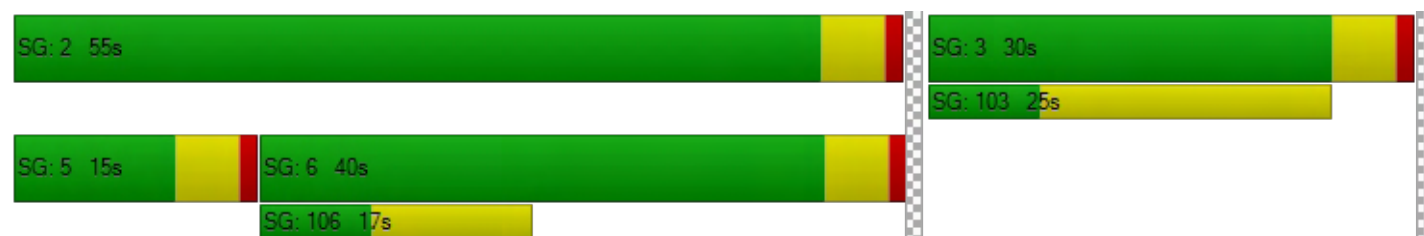
d_M, Delay for Movement [s/veh]	34.60	10.35	23.03	23.11	23.03	23.03
Movement LOS	C	B	C	C	C	C
d_A, Approach Delay [s/veh]	10.96		23.03		23.03	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	17.22					
Intersection LOS	B					
Intersection V/C	0.364					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.865	0.000	1.776
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	4.919	4.909	4.273
Bicycle LOS	E	E	E

Sequence

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



**OPENING YEAR (2021) PLUS PROJECT PLUS CUMULATIVE (EAGPC)
WITH IMPROVEMENTS**

S2A Modular Manufacturing

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Scenario 7 Opening Year (Phase1) with Project

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5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	EB Right	0.388	5.4	A
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.605	20.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	5.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.388

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	111	94	40	14	15
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	765	795	41	19	20
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	220	228	12	5	6
Total Analysis Volume [veh/h]	48	879	914	47	22	23
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	10	35	25	0	25	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	60	60	60	60	60
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	47	40	40	3
g / C, Green / Cycle	0.05	0.79	0.66	0.66	0.05
(v / s)_i Volume / Saturation Flow Rate	0.03	0.24	0.25	0.26	0.03
s, saturation flow rate [veh/h]	1810	3618	1900	1868	1705
c, Capacity [veh/h]	87	2849	1247	1226	79
d1, Uniform Delay [s]	28.01	1.79	4.75	4.78	28.11
k, delay calibration	0.11	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.35	0.28	0.90	0.94	6.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.31	0.39	0.39	0.57
d, Delay for Lane Group [s/veh]	33.35	2.07	5.66	5.72	34.49
Lane Group LOS	C	A	A	A	C
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.75	0.22	1.83	1.85	0.74
50th-Percentile Queue Length [ft/ln]	18.73	5.59	45.87	46.32	18.57
95th-Percentile Queue Length [veh/ln]	1.35	0.40	3.30	3.33	1.34
95th-Percentile Queue Length [ft/ln]	33.71	10.06	82.57	83.37	33.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	33.35	2.07	5.69	5.72	34.49	34.49
Movement LOS	C	A	A	A	C	C
d_A, Approach Delay [s/veh]	3.69		5.69		34.49	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	5.40					
Intersection LOS	A					
Intersection V/C	0.388					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	0.00	20.01
I_p,int, Pedestrian LOS Score for Intersection	2.834	0.000	1.761
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.897	4.925	4.207
Bicycle LOS	E	E	D

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	75	5	2	108	7	57	32	16	23	6	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	627	71	116	645	42	129	215	61	46	201	152
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	182	21	34	187	12	37	62	18	13	58	44
Total Analysis Volume [veh/h]	43	728	82	135	749	49	150	250	71	53	234	177
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	25	0	18	32	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	28	28	7	32	32	20	20	20	20	20
g / C, Green / Cycle	0.04	0.40	0.40	0.10	0.45	0.45	0.29	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.22	0.07	0.21	0.21	0.13	0.18	0.05	0.12	0.11
s, saturation flow rate [veh/h]	1810	1900	1833	1810	1900	1859	1165	1829	1075	1900	1615
c, Capacity [veh/h]	76	757	730	176	861	843	292	531	222	552	469
d1, Uniform Delay [s]	32.95	16.21	16.21	30.88	13.30	13.30	28.21	21.41	29.16	20.13	19.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.33	2.81	2.91	6.82	1.83	1.87	1.39	1.11	0.55	0.52	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.54	0.54	0.77	0.47	0.47	0.51	0.60	0.24	0.42	0.38
d, Delay for Lane Group [s/veh]	39.28	19.02	19.12	37.70	15.13	15.17	29.61	22.52	29.71	20.65	20.33
Lane Group LOS	D	B	B	D	B	B	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.83	5.24	5.08	2.41	4.18	4.10	2.34	4.24	0.81	2.87	2.14
50th-Percentile Queue Length [ft/ln]	20.73	130.92	126.93	60.30	104.40	102.40	58.55	105.88	20.30	71.75	53.60
95th-Percentile Queue Length [veh/ln]	1.49	8.99	8.77	4.34	7.52	7.37	4.22	7.61	1.46	5.17	3.86
95th-Percentile Queue Length [ft/ln]	37.32	224.75	219.31	108.54	187.93	184.33	105.39	190.26	36.54	129.15	96.48

Movement, Approach, & Intersection Results

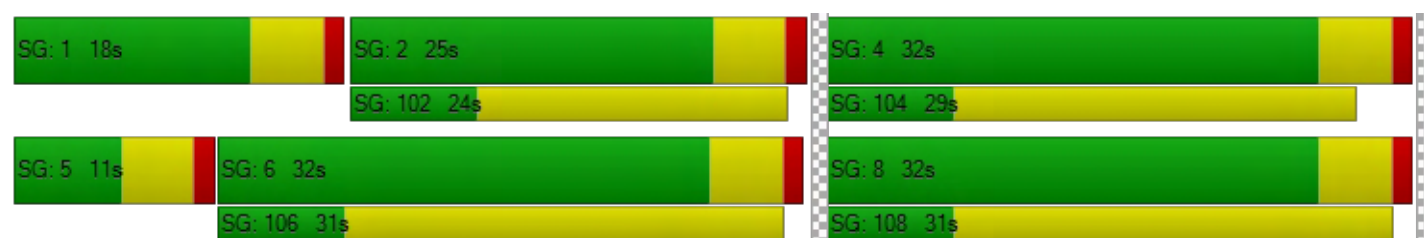
d_M, Delay for Movement [s/veh]	39.28	19.06	19.12	37.70	15.15	15.17	29.61	22.52	22.52	29.71	20.65	20.33
Movement LOS	D	B	B	D	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	20.09			18.41			24.78			21.56		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	20.58											
Intersection LOS	C											
Intersection V/C	0.605											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.795			3.083			2.272			2.420		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	571			771			771			771		
d_b, Bicycle Delay [s]	17.86			13.21			13.21			13.21		
I_b,int, Bicycle LOS Score for Intersection	2.263			2.329			2.337			2.325		
Bicycle LOS	B			B			B			B		

Sequence

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



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Scenario 7 Opening Year (Phase1) with Project

Report File: G:\...\PMOY1p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	NB Left	0.430	19.8	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.645	27.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	193	195	15	32	36
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	1044	1035	21	37	41
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	285	283	6	10	11
Total Analysis Volume [veh/h]	24	1141	1131	23	40	45
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	15	55	40	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		Yes	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	10	50	35	35	25
g / C, Green / Cycle	0.12	0.59	0.41	0.41	0.29
(v / s)_i Volume / Saturation Flow Rate	0.01	0.32	0.30	0.31	0.05
s, saturation flow rate [veh/h]	1810	3618	1900	1887	1701
c, Capacity [veh/h]	213	2128	782	777	500
d1, Uniform Delay [s]	33.53	10.53	21.12	21.18	22.29
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.07	0.97	6.14	6.34	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.54	0.74	0.74	0.17
d, Delay for Lane Group [s/veh]	34.60	11.50	27.26	27.53	23.03
Lane Group LOS	C	B	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.49	5.61	10.08	10.14	1.34
50th-Percentile Queue Length [ft/ln]	12.22	140.20	251.97	253.46	33.38
95th-Percentile Queue Length [veh/ln]	0.88	9.49	15.29	15.36	2.40
95th-Percentile Queue Length [ft/ln]	22.00	237.30	382.13	384.01	60.09

Movement, Approach, & Intersection Results

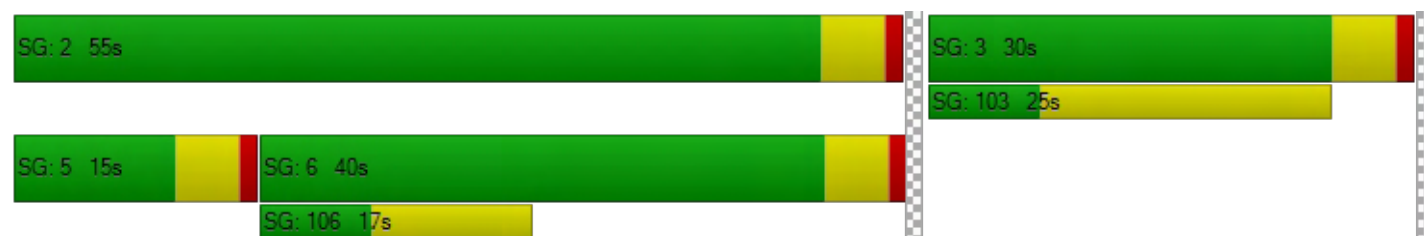
d_M, Delay for Movement [s/veh]	34.60	11.50	27.39	27.53	23.03	23.03
Movement LOS	C	B	C	C	C	C
d_A, Approach Delay [s/veh]	11.98		27.39		23.03	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	19.77					
Intersection LOS	B					
Intersection V/C	0.430					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.957	0.000	1.776
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	5.094	5.084	4.273
Bicycle LOS	F	F	E

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.645

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	119	6	9	193	19	91	57	17	55	9	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	756	85	141	915	121	157	315	51	109	240	121
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	208	23	39	252	33	43	87	14	30	66	33
Total Analysis Volume [veh/h]	53	833	94	155	1008	133	173	347	56	120	264	133
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	30	0	20	40	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	32	32	9	37	37	29	29	29	29	29
g / C, Green / Cycle	0.04	0.37	0.37	0.11	0.43	0.43	0.35	0.35	0.35	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.03	0.25	0.25	0.09	0.31	0.31	0.15	0.22	0.12	0.14	0.08
s, saturation flow rate [veh/h]	1810	1900	1833	1810	1900	1824	1133	1855	998	1900	1615
c, Capacity [veh/h]	77	702	677	193	824	791	336	644	231	660	561
d1, Uniform Delay [s]	40.15	22.48	22.48	37.11	19.65	19.69	30.39	23.13	35.23	21.03	19.73
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.16	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.29	5.08	5.25	7.58	5.04	5.32	1.22	1.43	1.81	0.39	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.67	0.67	0.80	0.71	0.71	0.51	0.63	0.52	0.40	0.24
d, Delay for Lane Group [s/veh]	50.43	27.56	27.74	44.70	24.69	25.01	31.61	24.57	37.04	21.42	19.95
Lane Group LOS	D	C	C	D	C	C	C	C	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.30	8.51	8.24	3.42	9.53	9.26	3.19	6.48	2.41	3.78	1.79
50th-Percentile Queue Length [ft/ln]	32.45	212.73	206.09	85.45	238.29	231.53	79.72	162.10	60.35	94.50	44.66
95th-Percentile Queue Length [veh/ln]	2.34	13.29	12.95	6.15	14.59	14.25	5.74	10.66	4.35	6.80	3.22
95th-Percentile Queue Length [ft/ln]	58.41	332.32	323.80	153.82	364.87	356.30	143.50	266.50	108.63	170.10	80.39

Movement, Approach, & Intersection Results

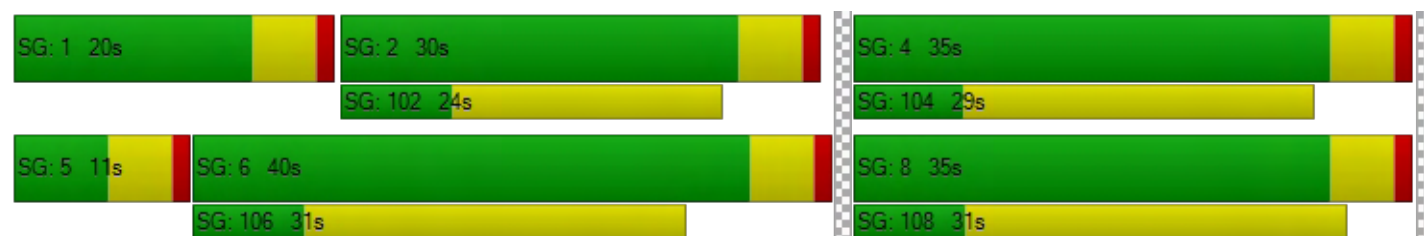
d_M, Delay for Movement [s/veh]	50.43	27.63	27.74	44.70	24.82	25.01	31.61	24.57	24.57	37.04	21.42	19.95
Movement LOS	D	C	C	D	C	C	C	C	C	D	C	B
d_A, Approach Delay [s/veh]	28.88			27.22			26.68			24.67		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	27.22											
Intersection LOS	C											
Intersection V/C	0.645											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.972			3.223			2.381			2.489		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			824			706			706		
d_b, Bicycle Delay [s]	21.18			14.71			17.79			17.79		
I_b,int, Bicycle LOS Score for Intersection	2.368			2.629			2.510			2.413		
Bicycle LOS	B			B			B			B		

Sequence

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



**COMPLETION YEAR (2024) PLUS PROJECT (EAGP)
WITH IMPROVEMENTS**

S2A Modular Manufacturing

Vistro File: G:\...\AM_IMPRV.vistro

Scenario 5 Opening Year (Phase2) (EAGp)

Report File: G:\...\AMEAG2p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	EB Left	0.438	8.3	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	8.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	0	0	90	28	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	694	744	91	34	33
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	199	214	26	10	9
Total Analysis Volume [veh/h]	110	798	855	105	39	38
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	15	45	30	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	75	75	75	75	75
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	6	61	50	50	4
g / C, Green / Cycle	0.08	0.81	0.66	0.66	0.06
(v / s)_i Volume / Saturation Flow Rate	0.06	0.22	0.25	0.26	0.05
s, saturation flow rate [veh/h]	1810	3618	1900	1829	1708
c, Capacity [veh/h]	144	2920	1256	1209	102
d1, Uniform Delay [s]	33.87	1.79	5.78	5.85	34.77
k, delay calibration	0.11	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.07	0.23	0.88	0.98	10.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.27	0.38	0.40	0.75
d, Delay for Lane Group [s/veh]	41.94	2.02	6.66	6.83	45.48
Lane Group LOS	D	A	A	A	D
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.18	0.44	2.69	2.74	1.65
50th-Percentile Queue Length [ft/ln]	54.53	10.92	67.21	68.49	41.32
95th-Percentile Queue Length [veh/ln]	3.93	0.79	4.84	4.93	2.98
95th-Percentile Queue Length [ft/ln]	98.15	19.66	120.98	123.28	74.38

Movement, Approach, & Intersection Results

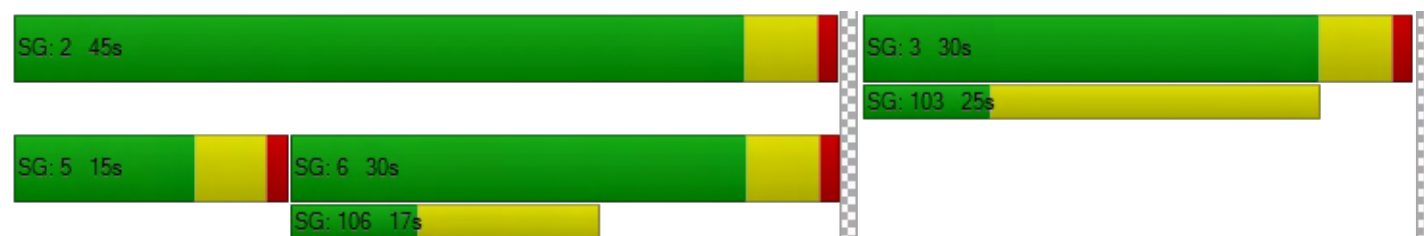
d_M, Delay for Movement [s/veh]	41.94	2.02	6.74	6.83	45.48	45.48
Movement LOS	D	A	A	A	D	D
d_A, Approach Delay [s/veh]	6.86		6.75		45.48	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.33					
Intersection LOS	A					
Intersection V/C	0.438					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	27.31	0.00	27.31
I_p,int, Pedestrian LOS Score for Intersection	2.833	0.000	1.847
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.882	4.924	4.259
Bicycle LOS	E	E	E

Sequence

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



S2A Modular Manufacturing

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Scenario 5 Opening Year (Phase2) (EAGp)

Report File: G:\...\PMEAG2p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest PI	Signalized	HCM 6th Edition	NB Left	0.466	18.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	0	32	72	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	903	891	39	78	85
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	247	243	11	21	23
Total Analysis Volume [veh/h]	44	987	973	43	85	93
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	15	55	40	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		Yes	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	10	50	35	35	25
g / C, Green / Cycle	0.12	0.59	0.41	0.41	0.29
(v / s)_i Volume / Saturation Flow Rate	0.02	0.27	0.27	0.27	0.10
s, saturation flow rate [veh/h]	1810	3618	1900	1872	1702
c, Capacity [veh/h]	213	2128	782	771	501
d1, Uniform Delay [s]	33.91	9.91	20.07	20.18	23.65
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.19	0.73	4.15	4.39	1.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.46	0.65	0.66	0.36
d, Delay for Lane Group [s/veh]	36.10	10.64	24.22	24.57	25.62
Lane Group LOS	D	B	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.92	4.55	8.22	8.30	3.01
50th-Percentile Queue Length [ft/ln]	22.96	113.71	205.45	207.39	75.34
95th-Percentile Queue Length [veh/ln]	1.65	8.05	12.92	13.02	5.42
95th-Percentile Queue Length [ft/ln]	41.33	201.15	322.99	325.48	135.62

Movement, Approach, & Intersection Results

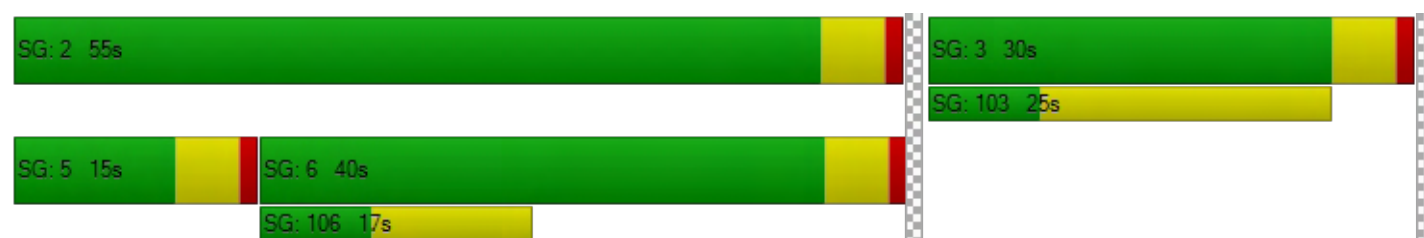
d_M, Delay for Movement [s/veh]	36.10	10.64	24.39	24.57	25.62	25.62
Movement LOS	D	B	C	C	C	C
d_A, Approach Delay [s/veh]	11.73		24.40		25.62	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	18.62					
Intersection LOS	B					
Intersection V/C	0.466					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.904	0.000	1.841
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	4.983	4.971	4.426
Bicycle LOS	E	E	E

Sequence

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



**COMPLETION YEAR (2024) PLUS PROJECT PLUS CUMULATIVE (EAGPC)
WITH IMPROVEMENTS**

S2A Modular Manufacturing

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Scenario 4 Opening Year (Phase2) with Project

Report File: G:\...\AMOY2p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	EB Left	0.462	8.4	A
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.655	21.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	0	629	674	1	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	111	94	90	28	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	805	838	91	34	33
Peak Hour Factor	0.8702	0.8702	0.8702	0.8702	0.8702	0.8702
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	231	241	26	10	9
Total Analysis Volume [veh/h]	110	925	963	105	39	38
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	15	50	35	0	35	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	7	70	58	58	5
g / C, Green / Cycle	0.08	0.82	0.69	0.69	0.06
(v / s)_i Volume / Saturation Flow Rate	0.06	0.26	0.28	0.29	0.05
s, saturation flow rate [veh/h]	1810	3618	1900	1836	1708
c, Capacity [veh/h]	142	2977	1303	1259	102
d1, Uniform Delay [s]	38.45	1.79	5.85	5.93	39.40
k, delay calibration	0.11	0.50	0.50	0.50	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.61	0.27	0.96	1.05	10.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.31	0.41	0.42	0.76
d, Delay for Lane Group [s/veh]	47.06	2.06	6.80	6.98	50.29
Lane Group LOS	D	A	A	A	D
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	2.50	0.63	3.37	3.43	1.87
50th-Percentile Queue Length [ft/ln]	62.50	15.74	84.14	85.70	46.68
95th-Percentile Queue Length [veh/ln]	4.50	1.13	6.06	6.17	3.36
95th-Percentile Queue Length [ft/ln]	112.49	28.34	151.46	154.26	84.02

Movement, Approach, & Intersection Results

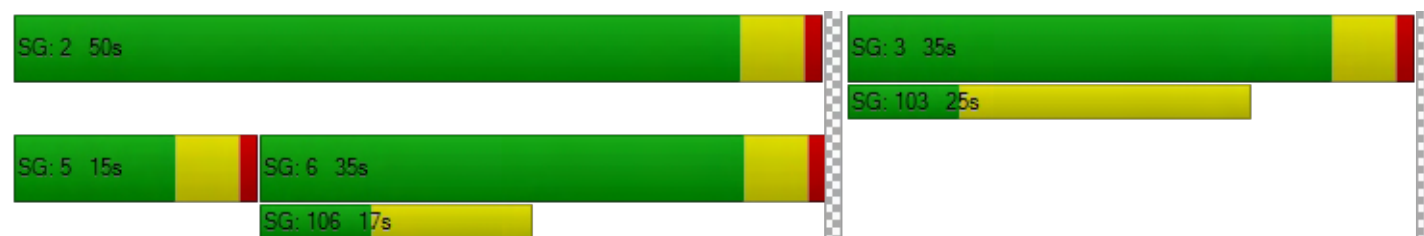
d_M, Delay for Movement [s/veh]	47.06	2.06	6.88	6.98	50.29	50.29
Movement LOS	D	A	A	A	D	D
d_A, Approach Delay [s/veh]	6.85		6.89		50.29	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	8.40					
Intersection LOS	A					
Intersection V/C	0.462					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.891	0.000	1.854
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	4.986	5.014	4.259
Bicycle LOS	E	F	E

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	21.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	24	531	63	110	516	34	69	176	43	22	187	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	117	5	3	118	8	61	32	16	23	6	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	703	75	124	688	46	137	226	63	47	212	166
Peak Hour Factor	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607	0.8607
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	204	22	36	200	13	40	66	18	14	62	48
Total Analysis Volume [veh/h]	44	817	87	144	799	53	159	263	73	55	246	193
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	25	0	18	32	0	0	32	0	0	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	3	27	27	7	31	31	21	21	21	21	21
g / C, Green / Cycle	0.04	0.38	0.38	0.10	0.44	0.44	0.30	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.02	0.24	0.24	0.08	0.23	0.23	0.14	0.18	0.05	0.13	0.12
s, saturation flow rate [veh/h]	1810	1900	1837	1810	1900	1859	1152	1830	1061	1900	1615
c, Capacity [veh/h]	78	723	699	186	837	819	301	554	228	575	489
d1, Uniform Delay [s]	32.93	17.75	17.75	30.65	14.19	14.19	27.89	20.89	28.74	19.59	19.37
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.37	4.24	4.38	6.64	2.25	2.30	1.44	1.08	0.54	0.50	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.64	0.64	0.77	0.51	0.51	0.53	0.61	0.24	0.43	0.39
d, Delay for Lane Group [s/veh]	39.30	21.99	22.13	37.30	16.44	16.49	29.32	21.97	29.28	20.10	19.89
Lane Group LOS	D	C	C	D	B	B	C	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	0.85	6.41	6.23	2.56	4.73	4.64	2.48	4.37	0.84	2.97	2.31
50th-Percentile Queue Length [ft/ln]	21.20	160.33	155.67	63.89	118.16	115.88	61.89	109.37	20.89	74.26	57.80
95th-Percentile Queue Length [veh/ln]	1.53	10.57	10.32	4.60	8.29	8.17	4.46	7.80	1.50	5.35	4.16
95th-Percentile Queue Length [ft/ln]	38.16	264.16	257.98	114.99	207.29	204.14	111.40	195.12	37.59	133.67	104.04

Movement, Approach, & Intersection Results

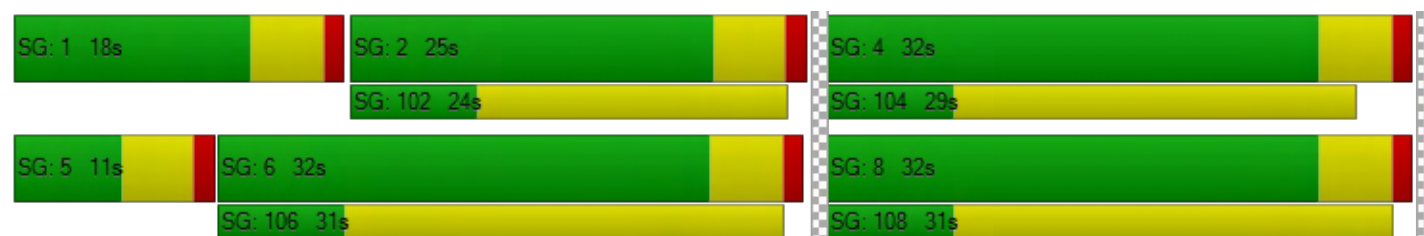
d_M, Delay for Movement [s/veh]	39.30	22.05	22.13	37.30	16.46	16.49	29.32	21.97	21.97	29.28	20.10	19.89
Movement LOS	D	C	C	D	B	B	C	C	C	C	C	B
d_A, Approach Delay [s/veh]	22.86			19.48			24.33			21.04		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.65											
Intersection LOS	C											
Intersection V/C	0.655											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.822			3.134			2.290			2.438		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	571			771			771			771		
d_b, Bicycle Delay [s]	17.86			13.21			13.21			13.21		
I_b,int, Bicycle LOS Score for Intersection	2.342			2.381			2.376			2.375		
Bicycle LOS	B			B			B			B		

Sequence

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



S2A Modular Manufacturing

Vistro File: G:\...\PM_IMPRV.vistro

Scenario 4 Opening Year (Phase2) with Project

Report File: G:\...\PMOY2p_IMPRV.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	State Street / Crows Nest Pl	Signalized	HCM 6th Edition	NB Left	0.531	21.5	C
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.688	30.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: State Street / Crows Nest PI

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.531

Intersection Setup

Name	State St		State St		Crows Nest PI	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	State St		State St		Crows Nest PI	
Base Volume Input [veh/h]	4	818	807	6	5	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	193	195	32	72	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	1096	1086	39	78	85
Peak Hour Factor	0.9153	0.9153	0.9153	0.9153	0.9153	0.9153
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	299	297	11	21	23
Total Analysis Volume [veh/h]	44	1197	1186	43	85	93
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fixed time
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protected	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	5	2	6	0	3	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	5	5	0	5	0
Maximum Green [s]	30	30	30	0	30	0
Amber [s]	4.0	4.0	4.0	0.0	4.0	0.0
All red [s]	1.0	1.0	1.0	0.0	1.0	0.0
Split [s]	15	55	40	0	30	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	3.0	0.0
Walk [s]	0	7	7	0	7	0
Pedestrian Clearance [s]	0	13	10	0	18	0
Rest In Walk		Yes	No		No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	3.0	0.0	3.0	0.0
Minimum Recall	No	No	No		No	
Maximum Recall	No	No	No		No	
Pedestrian Recall	No	No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	C	C
C, Cycle Length [s]	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	10	50	35	35	25
g / C, Green / Cycle	0.12	0.59	0.41	0.41	0.29
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.32	0.33	0.10
s, saturation flow rate [veh/h]	1810	3618	1900	1877	1702
c, Capacity [veh/h]	213	2128	782	773	501
d1, Uniform Delay [s]	33.91	10.77	21.74	21.86	23.65
k, delay calibration	0.50	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.19	1.08	7.79	8.29	1.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.21	0.56	0.79	0.80	0.36
d, Delay for Lane Group [s/veh]	36.10	11.85	29.53	30.16	25.62
Lane Group LOS	D	B	C	C	C
Critical Lane Group	Yes	No	No	Yes	Yes
50th-Percentile Queue Length [veh/ln]	0.92	6.03	11.28	11.42	3.01
50th-Percentile Queue Length [ft/ln]	22.96	150.76	281.92	285.51	75.34
95th-Percentile Queue Length [veh/ln]	1.65	10.06	16.78	16.96	5.42
95th-Percentile Queue Length [ft/ln]	41.33	251.44	419.60	424.07	135.62

Movement, Approach, & Intersection Results

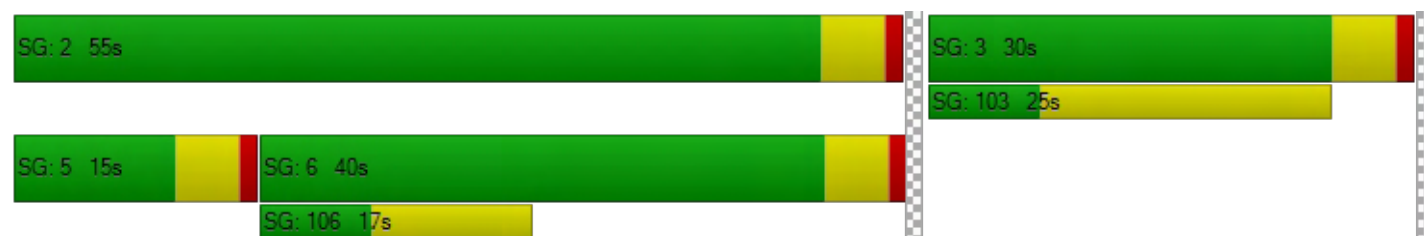
d_M, Delay for Movement [s/veh]	36.10	11.85	29.83	30.16	25.62	25.62
Movement LOS	D	B	C	C	C	C
d_A, Approach Delay [s/veh]	12.71		29.84		25.62	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	21.53					
Intersection LOS	C					
Intersection V/C	0.531					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.995	0.000	1.841
Crosswalk LOS	C	F	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	5.156	5.146	4.426
Bicycle LOS	F	F	E

Sequence

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



Intersection Level Of Service Report

Intersection 4: State Street / Menlo Avenue

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.688

Intersection Setup

Name	State St			State St			Menlo Ave			Menlo Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			40.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Menlo Ave			Menlo Ave		
Base Volume Input [veh/h]	29	612	76	127	694	98	63	248	33	52	222	112
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	131	6	16	222	24	93	57	17	55	9	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	807	90	156	988	132	163	331	53	112	254	131
Peak Hour Factor	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078	0.9078
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	222	25	43	272	36	45	91	15	31	70	36
Total Analysis Volume [veh/h]	55	889	99	172	1088	145	180	365	58	123	280	144
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	5	5	0	0	5	0	0	5	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	4.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	0.0	4.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	11	30	0	20	40	0	0	35	0	0	35	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	17	0	0	24	0	0	24	0	0	22	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	4	30	30	10	36	36	31	31	31	31	31
g / C, Green / Cycle	0.04	0.35	0.35	0.12	0.42	0.42	0.36	0.36	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.26	0.10	0.33	0.33	0.16	0.23	0.13	0.15	0.09
s, saturation flow rate [veh/h]	1810	1900	1834	1810	1900	1823	1117	1855	979	1900	1615
c, Capacity [veh/h]	78	659	637	211	799	766	339	668	231	684	582
d1, Uniform Delay [s]	40.14	24.64	24.64	36.68	21.32	21.40	30.26	22.54	35.21	20.41	19.11
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.18	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.01	8.14	8.41	7.55	7.62	8.19	1.30	1.63	1.91	0.39	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.71	0.76	0.76	0.82	0.78	0.79	0.53	0.63	0.53	0.41	0.25
d, Delay for Lane Group [s/veh]	51.15	32.78	33.06	44.23	28.94	29.59	31.55	24.17	37.12	20.80	19.33
Lane Group LOS	D	C	C	D	C	C	C	C	D	C	B
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.36	10.04	9.75	3.77	11.35	11.12	3.33	6.76	2.48	3.95	1.90
50th-Percentile Queue Length [ft/ln]	33.92	251.10	243.66	94.35	283.81	278.11	83.13	169.04	62.05	98.66	47.48
95th-Percentile Queue Length [veh/ln]	2.44	15.24	14.87	6.79	16.88	16.59	5.99	11.03	4.47	7.10	3.42
95th-Percentile Queue Length [ft/ln]	61.06	381.04	371.66	169.82	421.95	414.86	149.63	275.65	111.70	177.58	85.47

Movement, Approach, & Intersection Results

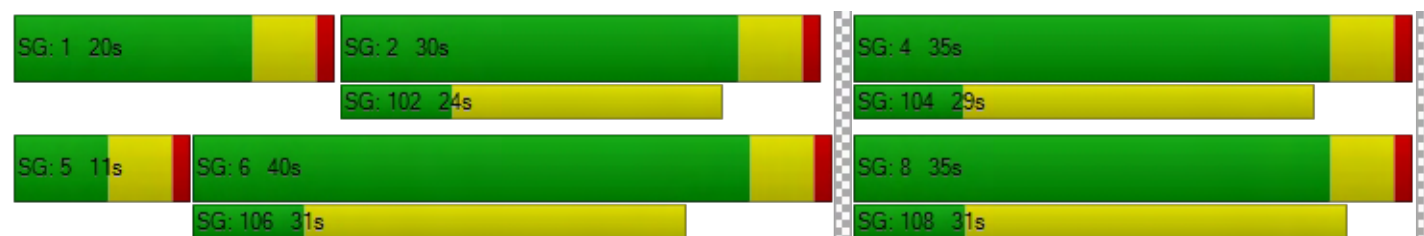
d_M, Delay for Movement [s/veh]	51.15	32.90	33.06	44.23	29.22	29.59	31.55	24.17	24.17	37.12	20.80	19.33
Movement LOS	D	C	C	D	C	C	C	C	C	D	C	B
d_A, Approach Delay [s/veh]	33.88			31.09			26.37			24.08		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	30.04											
Intersection LOS	C											
Intersection V/C	0.688											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	3.000			3.273			2.406			2.512		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	588			824			706			706		
d_b, Bicycle Delay [s]	21.18			14.71			17.79			17.79		
I_b,int, Bicycle LOS Score for Intersection	2.420			2.719			2.555			2.462		
Bicycle LOS	B			B			B			B		

Sequence

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



APPENDIX E

TRAFFIC SIGNAL WARRANT WORKSHEETS

PEAK HOUR VOLUME WARRANT (Rural Areas)

Existing Plus Project

Phase 1

Major Street Name = **State Street**

Total of Both Approaches (VPH) = **1668**

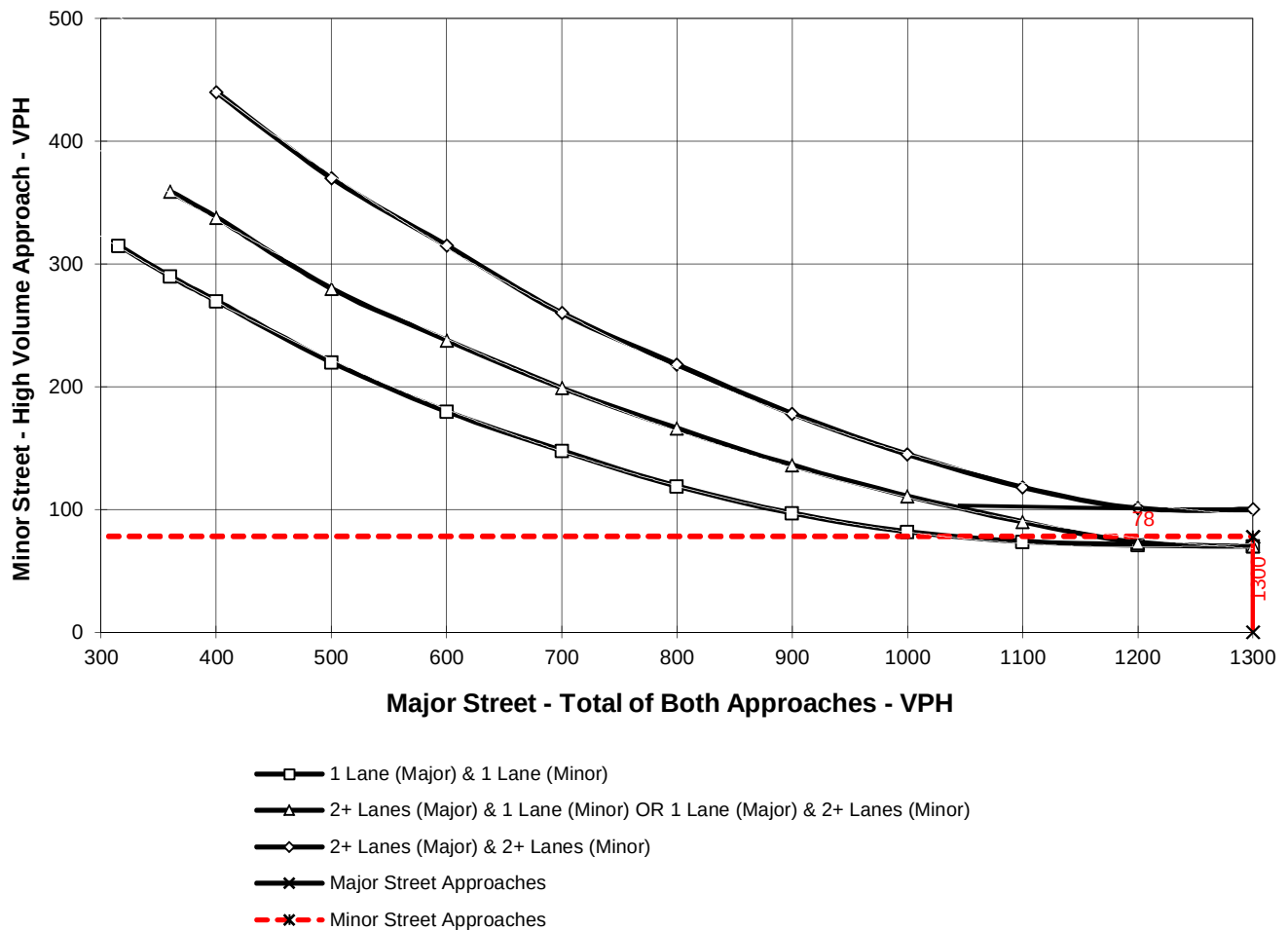
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Crows Nest Place**

High Volume Approach (VPH) = **78**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

PEAK HOUR VOLUME WARRANT (Rural Areas)

Existing Plus Project Phase 2

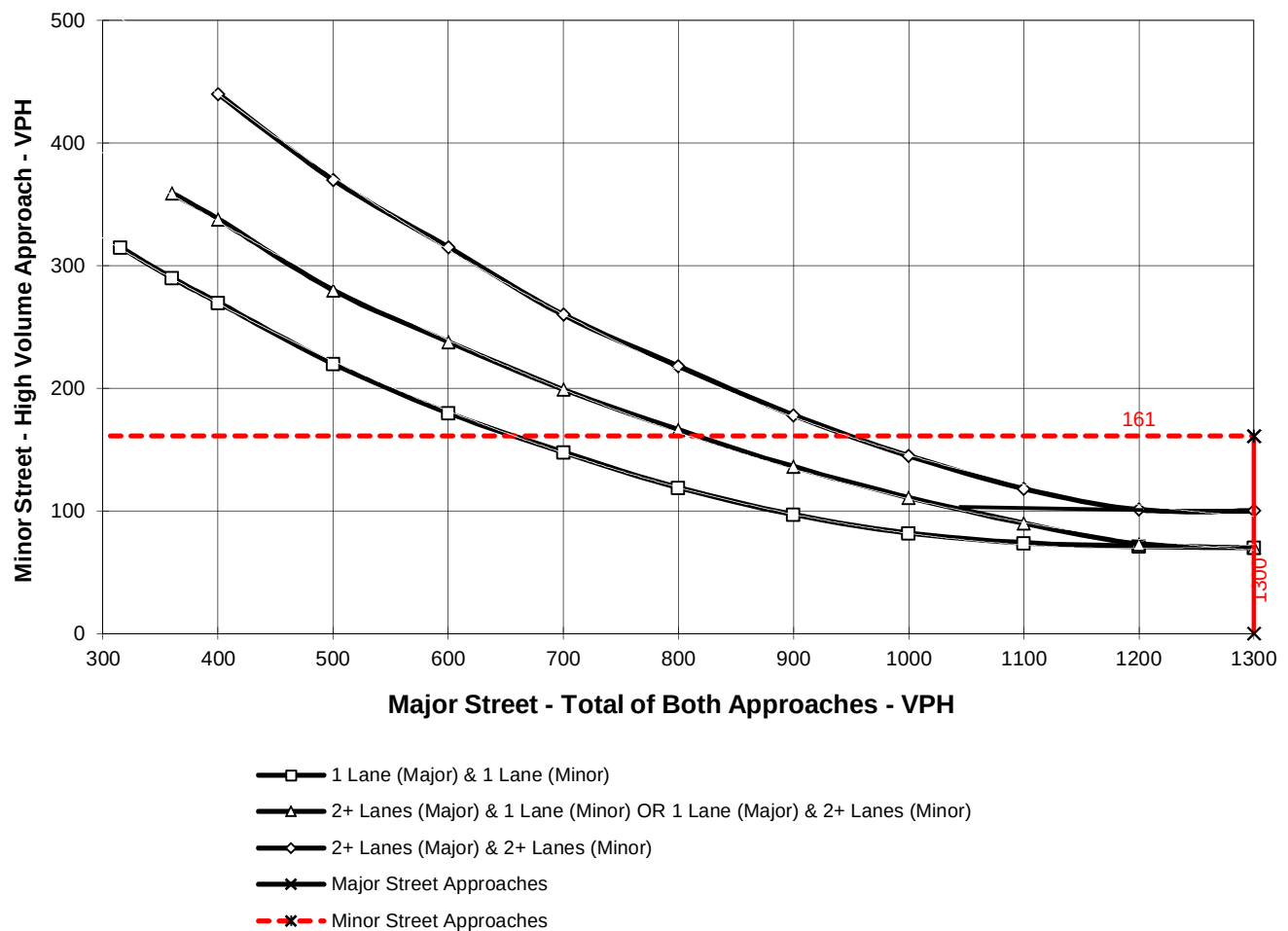
Major Street Name = **State Street**

Total of Both Approaches (VPH) = **1703**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Crows Nest Place**

High Volume Approach (VPH) = **161**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



** NOTE:

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

APPENDIX F

LEVEL OF SERVICE WORKSHEETS - CALTRANS

EXISTING

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro
Report File: G:\...\AME.pdf

Scenario 1 Existing
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.518	21.4	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.030	23.6	C
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.451	12.1	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.698	31.8	C
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.373	16.1	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	EB Left	0.574	22.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	22.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	101	18	28	81	24	26	199	10	13	221	13
Total Analysis Volume [veh/h]	41	405	71	111	324	97	102	798	39	51	884	53
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	29	29	29	29	29	29	5	23	23	3	21	21
g / C, Green / Cycle	0.42	0.42	0.42	0.42	0.42	0.42	0.07	0.32	0.32	0.05	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.13	0.12	0.17	0.06	0.06	0.22	0.22	0.03	0.25	0.25
s, saturation flow rate [veh/h]	1073	1900	1803	933	1900	1615	1810	1900	1869	1810	1900	1862
c, Capacity [veh/h]	387	793	752	382	793	674	136	612	602	85	559	548
d1, Uniform Delay [s]	19.67	13.66	13.68	19.52	14.36	12.68	31.80	20.70	20.70	32.79	23.27	23.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	1.00	1.07	1.92	1.56	0.45	8.11	1.39	1.42	6.75	3.66	3.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.31	0.31	0.29	0.41	0.14	0.75	0.69	0.69	0.60	0.85	0.85
d, Delay for Lane Group [s/veh]	20.22	14.66	14.75	21.44	15.92	13.12	39.91	22.10	22.12	39.54	26.93	27.00
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.53	2.44	2.36	1.50	3.46	0.91	1.92	5.71	5.62	0.97	7.27	7.14
50th-Percentile Queue Length [ft/ln]	13.14	61.11	59.05	37.45	86.58	22.70	47.93	142.71	140.48	24.24	181.76	178.43
95th-Percentile Queue Length [veh/ln]	0.95	4.40	4.25	2.70	6.23	1.63	3.45	9.63	9.51	1.75	11.69	11.52
95th-Percentile Queue Length [ft/ln]	23.64	110.00	106.29	67.41	155.85	40.87	86.28	240.66	237.67	43.64	292.31	287.97

Movement, Approach, & Intersection Results

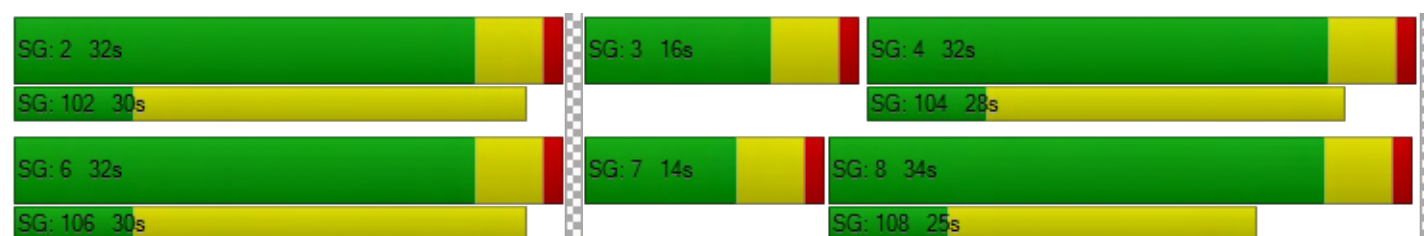
d_M, Delay for Movement [s/veh]	20.22	14.70	14.75	21.44	15.92	13.12	39.91	22.11	22.12	39.54	26.96	27.00
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	15.14			16.57			24.04			27.61		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.574											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	24.86			24.86			24.86			24.86		
I_p,int, Pedestrian LOS Score for Intersection	2.420			2.676			2.790			2.892		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	771			771			829			771		
d_b, Bicycle Delay [s]	13.21			13.21			12.01			13.21		
I_b,int, Bicycle LOS Score for Intersection	1.986			2.437			2.334			2.375		
Bicycle LOS	A			B			B			B		

Sequence

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



S2A Modular Manufacturing

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Scenario 1 Existing
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.666	27.1	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.034	30.4	D
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.468	11.0	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.755	41.1	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.398	16.4	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Right	0.662	29.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	29.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.662

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	96	20	40	90	47	37	293	16	26	280	22
Total Analysis Volume [veh/h]	54	383	81	160	361	189	147	1170	63	104	1119	89
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	12	38	0	10	36	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	31	31	31	31	31	31	39	30	30	39	29	29
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.39	0.49	0.37	0.37	0.49	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.17	0.19	0.12	0.19	0.33	0.33	0.14	0.32	0.32
s, saturation flow rate [veh/h]	1037	1900	1787	943	1900	1615	763	1900	1866	720	1900	1851
c, Capacity [veh/h]	321	734	691	352	734	624	361	701	689	343	678	661
d1, Uniform Delay [s]	25.50	17.22	17.25	25.17	18.60	17.06	16.62	23.66	23.70	16.20	24.41	24.44
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.28	0.28	0.11	0.29	0.29
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.13	1.17	1.27	4.20	2.35	1.25	0.74	9.39	9.79	0.49	11.11	11.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.32	0.33	0.46	0.49	0.30	0.41	0.89	0.89	0.30	0.90	0.90
d, Delay for Lane Group [s/veh]	26.63	18.39	18.52	29.37	20.95	18.31	17.36	33.05	33.48	16.69	35.52	36.10
Lane Group LOS	C	B	B	C	C	B	B	C	C	B	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.89	3.03	2.91	2.86	5.07	2.42	1.40	11.89	11.80	0.96	12.16	11.99
50th-Percentile Queue Length [ft/ln]	22.37	75.87	72.82	71.56	126.71	60.52	34.89	297.35	295.10	23.96	303.89	299.75
95th-Percentile Queue Length [veh/ln]	1.61	5.46	5.24	5.15	8.76	4.36	2.51	17.55	17.44	1.73	17.87	17.67
95th-Percentile Queue Length [ft/ln]	40.26	136.56	131.08	128.80	219.02	108.93	62.80	438.75	435.96	43.13	446.83	441.72

Movement, Approach, & Intersection Results

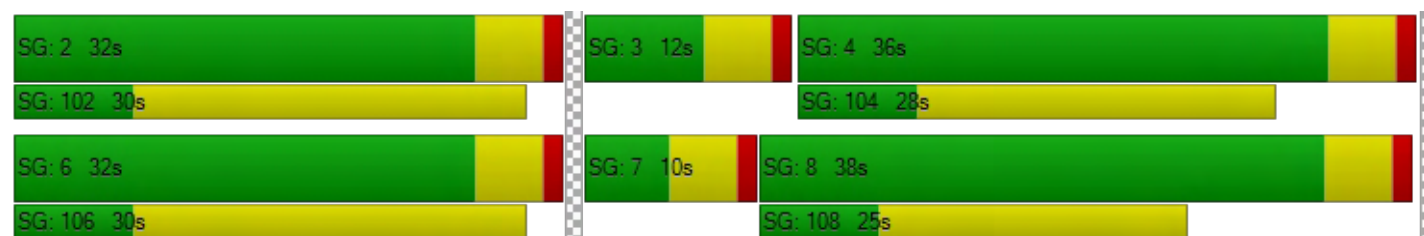
d_M, Delay for Movement [s/veh]	26.63	18.44	18.52	29.37	20.95	18.31	17.36	33.25	33.48	16.69	35.79	36.10
Movement LOS	C	B	B	C	C	B	B	C	C	B	D	D
d_A, Approach Delay [s/veh]	19.30			22.14			31.57			34.29		
Approach LOS	B			C			C			C		
d_I, Intersection Delay [s/veh]	29.15											
Intersection LOS	C											
Intersection V/C	0.662											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.523			2.814			2.994			3.140		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			825			775		
d_b, Bicycle Delay [s]	17.56			17.56			13.81			15.01		
I_b,int, Bicycle LOS Score for Intersection	1.987			2.731			2.698			2.642		
Bicycle LOS	A			B			B			B		

Sequence

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



EXISTING PLUS PROJECT

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Scenario 2 Existing Plus Project
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.529	24.3	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.336	49.1	E
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.489	12.2	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.697	36.9	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.393	16.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.587	25.9	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	NB Thru	0.000	10.0	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.017	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	35	0	3	10	6	21	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	387	62	100	292	90	110	694	34	44	769	56
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	111	18	29	84	26	32	199	10	13	221	16
Total Analysis Volume [veh/h]	41	445	71	115	336	103	126	798	39	51	884	64
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	35	35	35	35	35	35	7	27	27	3	23	23
g / C, Green / Cycle	0.43	0.43	0.43	0.43	0.43	0.43	0.09	0.33	0.33	0.04	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.14	0.13	0.18	0.06	0.07	0.22	0.22	0.03	0.25	0.25
s, saturation flow rate [veh/h]	1061	1900	1810	899	1900	1615	1810	1900	1869	1810	1900	1855
c, Capacity [veh/h]	395	825	786	375	825	701	162	636	626	79	549	536
d1, Uniform Delay [s]	21.14	14.88	14.90	21.39	15.57	13.69	35.68	22.79	22.79	37.68	27.09	27.09
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.19	0.19
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	1.02	1.08	2.10	1.49	0.44	7.79	1.20	1.22	8.41	7.45	7.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.32	0.32	0.31	0.41	0.15	0.78	0.66	0.66	0.64	0.87	0.87
d, Delay for Lane Group [s/veh]	21.67	15.90	15.98	23.49	17.06	14.13	43.47	23.98	24.00	46.08	34.54	34.70
Lane Group LOS	C	B	B	C	B	B	D	C	C	D	C	C
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.59	3.05	2.95	1.78	4.11	1.10	2.67	6.55	6.44	1.14	9.29	9.09
50th-Percentile Queue Length [ft/ln]	14.77	76.32	73.74	44.47	102.74	27.54	66.81	163.68	161.09	28.46	232.15	227.29
95th-Percentile Queue Length [veh/ln]	1.06	5.49	5.31	3.20	7.40	1.98	4.81	10.74	10.61	2.05	14.28	14.04
95th-Percentile Queue Length [ft/ln]	26.58	137.37	132.74	80.05	184.94	49.57	120.27	268.59	265.17	51.23	357.09	350.92

Movement, Approach, & Intersection Results

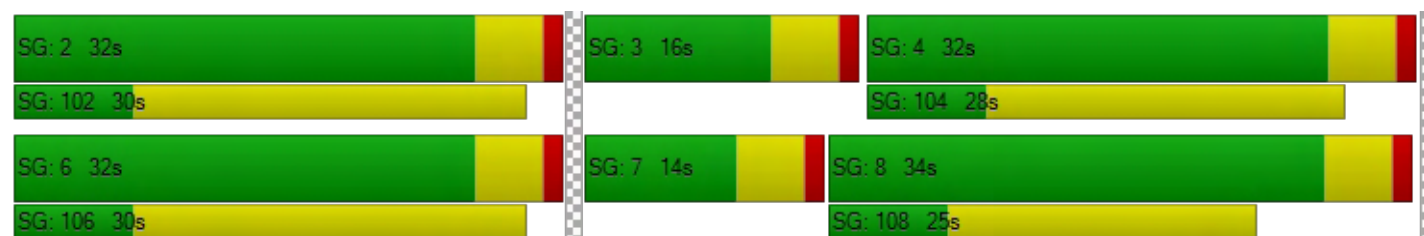
d_M, Delay for Movement [s/veh]	21.67	15.93	15.98	23.49	17.06	14.13	43.47	23.99	24.00	46.08	34.61	34.70
Movement LOS	C	B	B	C	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	16.36			17.85			26.54			35.20		
Approach LOS	B			B			C			D		
d_I, Intersection Delay [s/veh]	25.95											
Intersection LOS	C											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.444			2.704			2.804			2.908		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.019			2.474			2.354			2.384		
Bicycle LOS	B			B			B			B		

Sequence

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



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S2A Modular Manufacturing

Scenario 2 Existing Plus Project
5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.694	28.0	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.707	95.3	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.500	11.2	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	SB Left	0.776	42.5	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.414	16.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Right	0.670	31.4	C
7	Project West Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.8	A
8	Project East Access at Crows Nest Pl	Two-way stop	HCM 6th Edition	SB Left	0.062	9.8	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	31.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	7	25	13	6	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	361	74	153	355	186	140	1070	58	95	1023	84
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	99	20	42	97	51	38	293	16	26	280	23
Total Analysis Volume [veh/h]	54	395	81	167	388	203	153	1170	63	104	1119	92
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	43	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	37	37	37	37	37	37	43	34	34	43	32	32
g / C, Green / Cycle	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.37	0.37	0.48	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.05	0.13	0.13	0.18	0.20	0.13	0.20	0.33	0.33	0.15	0.32	0.32
s, saturation flow rate [veh/h]	1011	1900	1790	933	1900	1615	759	1900	1866	700	1900	1850
c, Capacity [veh/h]	324	775	730	364	775	659	337	708	696	312	674	656
d1, Uniform Delay [s]	27.36	18.11	18.14	26.54	19.84	18.06	19.15	26.31	26.35	18.67	27.68	27.72
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.15	0.28	0.28	0.11	0.29	0.30
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	1.06	1.15	4.13	2.31	1.21	1.30	8.66	9.03	0.62	12.11	12.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.31	0.32	0.46	0.50	0.31	0.45	0.88	0.88	0.33	0.91	0.91
d, Delay for Lane Group [s/veh]	28.47	19.17	19.29	30.67	22.14	19.27	20.46	34.98	35.39	19.30	39.79	40.45
Lane Group LOS	C	B	B	C	C	B	C	C	D	B	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.99	3.43	3.30	3.28	6.09	2.89	1.77	13.29	13.18	1.14	14.02	13.82
50th-Percentile Queue Length [ft/ln]	24.78	85.87	82.38	81.93	152.22	72.13	44.28	332.29	329.51	28.57	350.59	345.55
95th-Percentile Queue Length [veh/ln]	1.78	6.18	5.93	5.90	10.14	5.19	3.19	19.27	19.13	2.06	20.17	19.92
95th-Percentile Queue Length [ft/ln]	44.61	154.56	148.28	147.47	253.39	129.83	79.70	481.76	478.36	51.42	504.13	497.98

Movement, Approach, & Intersection Results

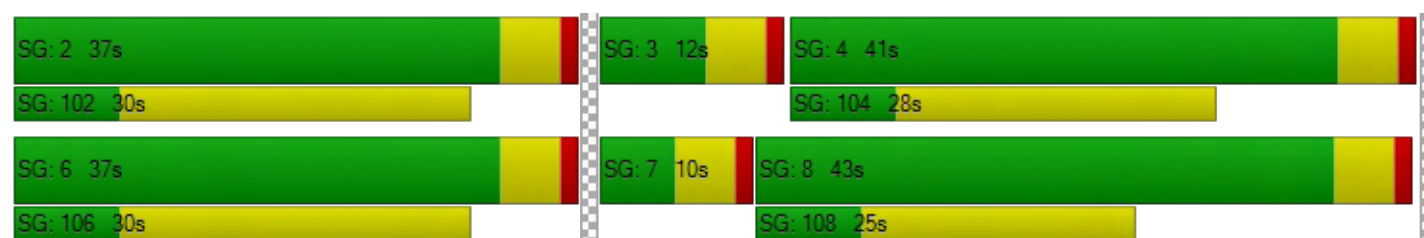
d_M, Delay for Movement [s/veh]	28.47	19.22	19.29	30.67	22.14	19.27	20.46	35.17	35.39	19.30	40.09	40.45
Movement LOS	C	B	B	C	C	B	C	D	D	B	D	D
d_A, Approach Delay [s/veh]	20.17			23.25			33.56			38.47		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.44											
Intersection LOS	C											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.542			2.838			3.005			3.159		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			844			800		
d_b, Bicycle Delay [s]	18.69			18.69			15.02			16.20		
I_b,int, Bicycle LOS Score for Intersection	1.997			2.810			2.703			2.644		
Bicycle LOS	A			C			B			B		

Sequence

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



OPENING YEAR (2021) WITHOUT PROJECT (EAGC)

S2A Modular Manufacturing

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Scenario 6 Opening Year (Phase1) without Project

Report File: G:\...\AMOY1.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.570	25.0	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.042	31.0	D
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.534	13.7	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.806	45.9	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.437	17.0	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.703	28.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.703

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	47	16	43	68	80	54	39	46	20	51	31
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	413	81	144	361	167	147	761	81	66	851	79
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	119	23	41	104	48	42	219	23	19	245	23
Total Analysis Volume [veh/h]	82	475	93	166	415	192	169	875	93	76	978	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	9	30	30	4	25	25
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.11	0.38	0.38	0.06	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.08	0.15	0.15	0.19	0.22	0.12	0.09	0.26	0.26	0.04	0.29	0.29
s, saturation flow rate [veh/h]	987	1900	1794	857	1900	1615	1810	1900	1837	1810	1900	1844
c, Capacity [veh/h]	278	724	684	305	724	616	209	714	690	101	601	583
d1, Uniform Delay [s]	28.58	18.11	18.13	27.89	19.62	17.40	34.58	21.07	21.08	37.27	26.21	26.22
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.16	0.16	0.11	0.26	0.26
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.68	1.66	1.78	6.84	3.28	1.32	7.33	1.80	1.87	10.66	11.43	11.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.29	0.40	0.40	0.54	0.57	0.31	0.81	0.69	0.69	0.75	0.90	0.90
d, Delay for Lane Group [s/veh]	31.25	19.77	19.90	34.73	22.89	18.72	41.90	22.87	22.94	47.92	37.64	38.03
Lane Group LOS	C	B	B	C	C	B	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.52	3.92	3.75	3.32	6.20	2.50	3.51	7.50	7.27	1.72	11.07	10.82
50th-Percentile Queue Length [ft/ln]	37.95	98.04	93.72	83.10	154.89	62.44	87.85	187.40	181.71	42.98	276.85	270.49
95th-Percentile Queue Length [veh/ln]	2.73	7.06	6.75	5.98	10.28	4.50	6.33	11.99	11.69	3.09	16.53	16.21
95th-Percentile Queue Length [ft/ln]	68.30	176.46	168.69	149.58	256.94	112.39	158.13	299.65	292.25	77.36	413.29	405.35

Movement, Approach, & Intersection Results

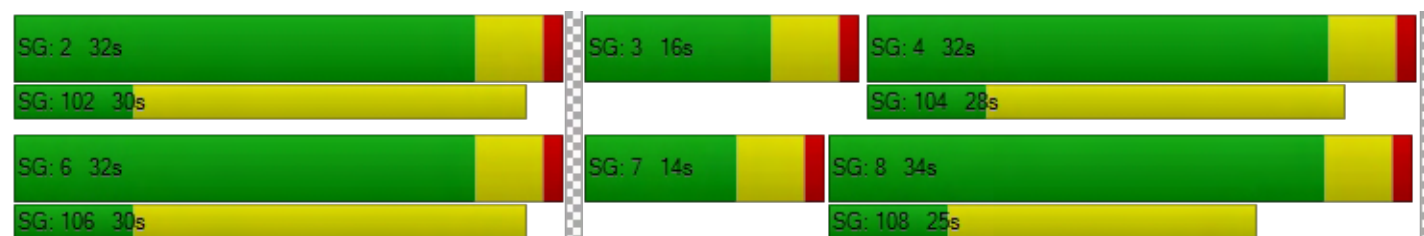
d_M, Delay for Movement [s/veh]	31.25	19.82	19.90	34.73	22.89	18.72	41.90	22.90	22.94	47.92	37.81	38.03
Movement LOS	C	B	B	C	C	B	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.27			24.40			25.73			38.50		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	28.62											
Intersection LOS	C											
Intersection V/C	0.703											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.526			2.773			2.953			3.048		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.096			2.835			2.498			2.504		
Bicycle LOS	B			C			B			B		

Sequence

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



S2A Modular Manufacturing

Vistro File: G:\...\PM.vistro

Scenario 6 Opening Year (Phase1) without Project

Report File: G:\...\PMOY1.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.804	32.1	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.061	50.6	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.595	13.7	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	EB Thru	0.975	79.3	E
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.540	17.3	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	SB Left	5.513	45.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	45.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	5.513

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	129	43	73	113	117	129	60	76	37	55	76
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	143	493	120	225	456	297	268	1173	136	136	1119	160
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	135	33	62	125	81	73	321	37	37	306	44
Total Analysis Volume [veh/h]	156	539	131	246	499	325	293	1283	149	149	1224	175
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	33	0	10	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	75	75	75	75	75	75	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	25	25	25	25	25	25	40	30	30	40	28	28
g / C, Green / Cycle	0.33	0.33	0.33	0.33	0.33	0.33	0.53	0.40	0.40	0.53	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.18	0.32	0.26	0.20	0.39	0.38	0.39	0.40	0.37	0.38
s, saturation flow rate [veh/h]	913	1900	1773	779	1900	1615	747	1900	1832	371	1900	1819
c, Capacity [veh/h]	166	636	593	224	636	540	397	759	732	432	707	676
d1, Uniform Delay [s]	36.23	20.30	20.31	34.00	22.52	20.79	17.03	21.81	22.10	14.92	23.55	23.55
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.41	0.39	0.41	0.43	0.38	0.39
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	56.16	3.33	3.58	89.39	9.41	4.89	9.75	19.20	23.81	1.88	30.52	35.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.54	0.55	1.10	0.78	0.60	0.74	0.95	0.97	0.34	1.00	1.02
d, Delay for Lane Group [s/veh]	92.39	23.64	23.89	123.39	31.93	25.68	26.78	41.01	45.92	16.80	54.07	59.08
Lane Group LOS	F	C	C	F	C	C	C	D	D	B	F	F
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.31	5.05	4.76	9.47	8.79	5.02	3.39	14.96	15.74	1.30	17.20	17.41
50th-Percentile Queue Length [ft/ln]	132.80	126.27	119.06	236.73	219.83	125.55	84.83	374.02	393.46	32.54	430.05	435.14
95th-Percentile Queue Length [veh/ln]	9.09	8.74	8.34	15.32	13.66	8.70	6.11	21.30	22.24	2.34	24.07	24.57
95th-Percentile Queue Length [ft/ln]	227.29	218.42	208.54	383.02	341.41	217.42	152.69	532.60	556.11	58.57	601.73	614.18

Movement, Approach, & Intersection Results

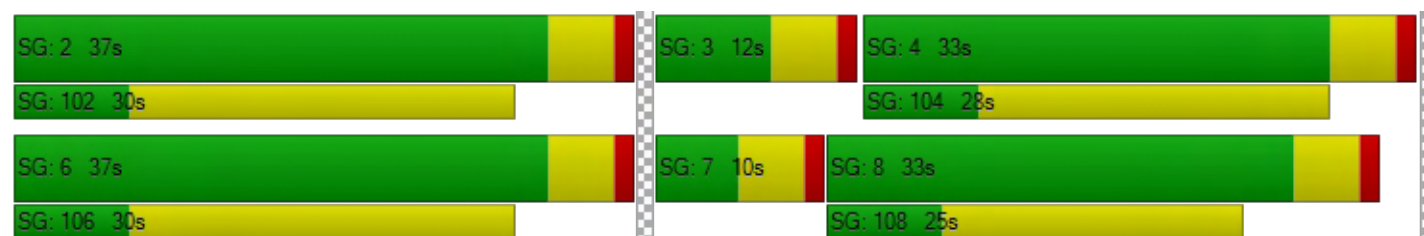
d_M, Delay for Movement [s/veh]	92.39	23.73	23.89	123.39	31.93	25.68	26.78	43.16	45.92	16.80	56.18	59.08
Movement LOS	F	C	C	F	C	C	C	D	D	B	E	E
d_A, Approach Delay [s/veh]	36.72			51.06			40.62			52.72		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.78											
Intersection LOS	D											
Intersection V/C	5.513											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	27.31			27.31			27.31			27.31		
I_p,int, Pedestrian LOS Score for Intersection	2.739			3.059			3.292			3.370		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	853			853			747			747		
d_b, Bicycle Delay [s]	12.33			12.33			14.73			14.73		
I_b,int, Bicycle LOS Score for Intersection	2.241			3.325			2.983			2.837		
Bicycle LOS	B			C			C			C		

Sequence

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



OPENING YEAR (2021) WITH PROJECT (EAGPC)

S2A Modular Manufacturing

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Scenario 7 Opening Year (Phase1) with Project

Report File: G:\...\AMOY1p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.586	25.2	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.197	43.1	E
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.550	13.9	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.811	49.2	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.447	17.0	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.714	28.9	C
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	NB Thru	0.000	9.4	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.010	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.714

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	62	16	45	72	83	63	39	46	20	51	35
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	428	81	146	365	170	156	761	81	66	851	83
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	123	23	42	105	49	45	219	23	19	245	24
Total Analysis Volume [veh/h]	82	492	93	168	420	195	179	875	93	76	978	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	10	31	31	4	25	25
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.12	0.38	0.38	0.06	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.08	0.16	0.16	0.20	0.22	0.12	0.10	0.26	0.26	0.04	0.29	0.29
s, saturation flow rate [veh/h]	982	1900	1797	843	1900	1615	1810	1900	1837	1810	1900	1842
c, Capacity [veh/h]	269	714	675	293	714	607	219	724	700	101	601	582
d1, Uniform Delay [s]	29.23	18.54	18.56	28.81	20.04	17.75	34.34	20.69	20.70	37.27	26.26	26.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.16	0.16	0.11	0.26	0.26
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.91	1.81	1.94	7.92	3.54	1.40	7.32	1.69	1.76	10.66	11.88	12.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.42	0.42	0.57	0.59	0.32	0.82	0.68	0.68	0.75	0.91	0.91
d, Delay for Lane Group [s/veh]	32.15	20.35	20.49	36.73	23.58	19.15	41.67	22.38	22.46	47.92	38.14	38.56
Lane Group LOS	C	C	C	D	C	B	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.55	4.12	3.94	3.49	6.39	2.58	3.71	7.39	7.17	1.72	11.20	10.94
50th-Percentile Queue Length [ft/ln]	38.68	102.96	98.49	87.20	159.81	64.41	92.81	184.85	179.27	42.98	280.06	273.44
95th-Percentile Queue Length [veh/ln]	2.78	7.41	7.09	6.28	10.54	4.64	6.68	11.85	11.56	3.09	16.69	16.36
95th-Percentile Queue Length [ft/ln]	69.62	185.32	177.29	156.95	263.47	115.94	167.06	296.34	289.06	77.36	417.29	409.03

Movement, Approach, & Intersection Results

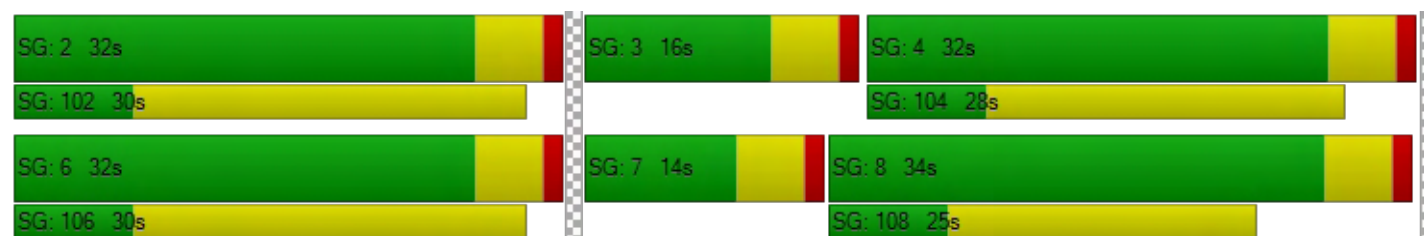
d_M, Delay for Movement [s/veh]	32.15	20.41	20.49	36.73	23.58	19.15	41.67	22.41	22.46	47.92	38.32	38.56
Movement LOS	C	C	C	D	C	B	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	21.86			25.30			25.42			38.98		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	28.92											
Intersection LOS	C											
Intersection V/C	0.714											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.533			2.782			2.956			3.052		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.110			2.852			2.506			2.508		
Bicycle LOS	B			C			B			B		

Sequence

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



S2A Modular Manufacturing

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Scenario 7 Opening Year (Phase1) with Project

Report File: G:\...\IPMOY1p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.817	33.7	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.539	91.7	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.609	13.8	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	EB Thru	0.986	81.5	F
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.548	17.4	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	SB Left	0.931	49.8	D
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.4	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.024	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	49.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.931

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	134	43	76	124	123	132	60	76	37	55	78
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	143	498	120	228	467	303	271	1173	136	136	1119	162
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	136	33	62	128	83	74	321	37	37	306	44
Total Analysis Volume [veh/h]	156	545	131	249	511	331	296	1283	149	149	1224	177
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	11	37	0	11	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	43	32	32	43	32	32
g / C, Green / Cycle	0.38	0.38	0.38	0.38	0.38	0.38	0.51	0.38	0.38	0.51	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.17	0.18	0.18	0.32	0.27	0.20	0.43	0.38	0.39	0.22	0.37	0.38
s, saturation flow rate [veh/h]	903	1900	1774	775	1900	1615	689	1900	1832	668	1900	1818
c, Capacity [veh/h]	202	718	670	254	718	610	329	721	695	322	713	682
d1, Uniform Delay [s]	38.33	20.17	20.17	36.21	22.51	20.70	24.17	26.38	26.38	18.18	26.51	26.56
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.43	0.45	0.14	0.43	0.44
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.23	2.35	2.53	51.98	5.93	3.44	29.44	31.42	38.26	1.35	30.47	35.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.49	0.49	0.98	0.71	0.54	0.90	1.00	1.02	0.46	1.00	1.01
d, Delay for Lane Group [s/veh]	62.56	22.52	22.70	88.19	28.44	24.14	53.61	57.80	64.65	19.53	56.98	61.96
Lane Group LOS	E	C	C	F	C	C	D	F	F	B	E	F
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.52	5.34	5.02	8.71	9.13	5.32	5.73	19.67	20.29	1.51	19.23	19.40
50th-Percentile Queue Length [ft/ln]	113.12	133.39	125.56	217.78	228.23	132.92	143.17	491.69	507.18	37.81	480.86	484.95
95th-Percentile Queue Length [veh/ln]	8.01	9.12	8.70	13.55	14.08	9.10	9.65	26.96	28.12	2.72	26.43	26.85
95th-Percentile Queue Length [ft/ln]	200.34	228.09	217.45	338.78	352.11	227.46	241.29	673.97	703.01	68.06	660.68	671.32

Movement, Approach, & Intersection Results

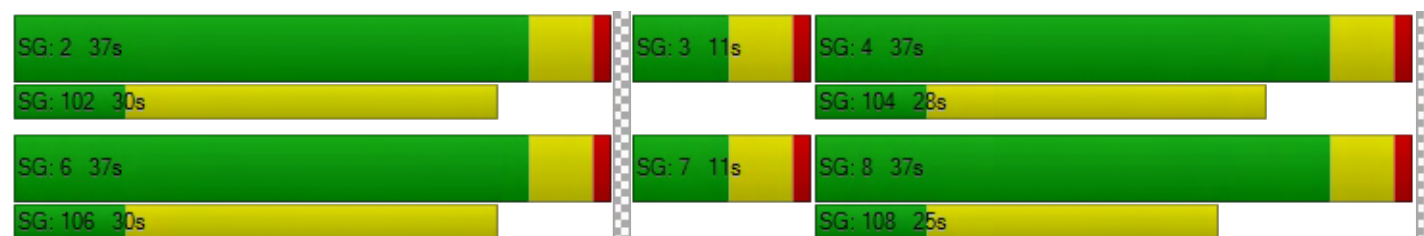
d_M, Delay for Movement [s/veh]	62.56	22.58	22.70	88.19	28.44	24.14	53.61	60.80	64.65	19.53	59.07	61.96
Movement LOS	E	C	C	F	C	C	D	E	E	B	E	E
d_A, Approach Delay [s/veh]	30.10			40.77			59.90			55.60		
Approach LOS	C			D			E			E		
d_I, Intersection Delay [s/veh]	49.84											
Intersection LOS	D											
Intersection V/C	0.931											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	32.21			32.21			32.21			32.21		
I_p,int, Pedestrian LOS Score for Intersection	2.747			3.074			3.301			3.382		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	753			753			753			753		
d_b, Bicycle Delay [s]	16.52			16.52			16.52			16.52		
I_b,int, Bicycle LOS Score for Intersection	2.246			3.360			2.985			2.838		
Bicycle LOS	B			C			C			C		

Sequence

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



COMPLETION YEAR (2024) WITHOUT PROJECT (EAGC)

S2A Modular Manufacturing

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Scenario 3 Opening Year (Phase2) without Project

Report File: G:\...\AMOY2.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.602	25.5	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.054	34.2	D
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.563	14.4	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	NB Left	0.847	50.3	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.459	17.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.738	29.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	29.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	47	16	43	68	80	54	39	46	20	51	31
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	436	84	150	379	173	152	805	84	69	900	82
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	125	24	43	109	50	44	231	24	20	259	24
Total Analysis Volume [veh/h]	85	501	97	172	436	199	175	925	97	79	1034	94
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	29	29	29	29	29	29	9	31	31	5	26	26
g / C, Green / Cycle	0.37	0.37	0.37	0.37	0.37	0.37	0.12	0.39	0.39	0.06	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.16	0.16	0.21	0.23	0.12	0.10	0.27	0.27	0.04	0.30	0.30
s, saturation flow rate [veh/h]	968	1900	1795	833	1900	1615	1810	1900	1837	1810	1900	1845
c, Capacity [veh/h]	244	694	656	277	694	590	214	741	716	104	625	607
d1, Uniform Delay [s]	31.03	19.22	19.23	30.34	20.91	18.38	34.45	20.51	20.52	37.19	25.79	25.80
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.19	0.19	0.11	0.29	0.29
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.90	2.03	2.17	10.06	4.26	1.54	7.50	2.10	2.20	10.87	13.27	13.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.44	0.44	0.62	0.63	0.34	0.82	0.70	0.70	0.76	0.91	0.92
d, Delay for Lane Group [s/veh]	34.93	21.25	21.41	40.40	25.18	19.92	41.95	22.61	22.72	48.06	39.06	39.59
Lane Group LOS	C	C	C	D	C	B	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.70	4.33	4.14	3.79	6.92	2.70	3.64	7.89	7.67	1.79	11.95	11.71
50th-Percentile Queue Length [ft/ln]	42.40	108.37	103.53	94.73	172.99	67.46	91.04	197.23	191.63	44.70	298.79	292.85
95th-Percentile Queue Length [veh/ln]	3.05	7.75	7.45	6.82	11.23	4.86	6.55	12.50	12.21	3.22	17.62	17.33
95th-Percentile Queue Length [ft/ln]	76.32	193.73	186.36	170.51	280.84	121.43	163.87	312.39	305.15	80.46	440.53	433.18

Movement, Approach, & Intersection Results

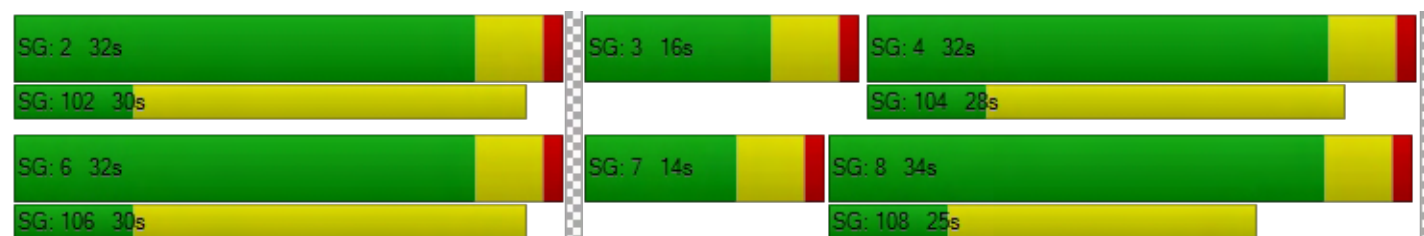
d_M, Delay for Movement [s/veh]	34.93	21.31	21.41	40.40	25.18	19.92	41.95	22.66	22.72	48.06	39.30	39.59
Movement LOS	C	C	C	D	C	B	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	23.02			27.12			25.48			39.89		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.86											
Intersection LOS	C											
Intersection V/C	0.738											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.545			2.788			2.986			3.084		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.123			2.891			2.547			2.555		
Bicycle LOS	B			C			B			B		

Sequence

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



S2A Modular Manufacturing

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Scenario 3 Opening Year (Phase2) without Project

Report File: G:\...\IPMOY2.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.847	34.7	C
2	State Street / Crows Nest Pl	Two-way stop	HCM 6th Edition	EB Left	0.096	58.2	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.625	14.4	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	EB Thru	1.021	88.8	F
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.565	17.9	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	SB Left	6.341	51.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	51.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	6.341

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	129	43	73	113	117	129	60	76	37	55	76
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	515	125	234	477	308	277	1241	140	142	1184	165
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	141	34	64	130	84	76	339	38	39	324	45
Total Analysis Volume [veh/h]	160	563	137	256	522	337	303	1357	153	155	1295	180
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	41	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	48	38	38	48	36	36
g / C, Green / Cycle	0.36	0.36	0.36	0.36	0.36	0.36	0.53	0.42	0.42	0.53	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.18	0.19	0.19	0.34	0.27	0.21	0.45	0.40	0.41	0.50	0.39	0.40
s, saturation flow rate [veh/h]	894	1900	1773	758	1900	1615	666	1900	1834	313	1900	1821
c, Capacity [veh/h]	166	678	633	222	678	576	331	800	772	361	757	726
d1, Uniform Delay [s]	42.66	22.99	23.00	39.59	25.66	23.52	27.85	25.12	25.57	18.75	26.80	27.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.44	0.46	0.50	0.43	0.44
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	60.53	3.00	3.21	107.30	8.22	4.30	32.15	19.67	25.23	3.69	26.83	32.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.53	0.53	1.15	0.77	0.58	0.92	0.95	0.97	0.43	0.99	1.00
d, Delay for Lane Group [s/veh]	103.19	25.99	26.21	146.89	33.89	27.82	60.00	44.80	50.81	22.44	53.63	59.47
Lane Group LOS	F	C	C	F	C	C	E	D	D	C	D	F
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.26	6.27	5.89	11.44	10.73	6.12	6.07	18.70	19.87	1.82	20.28	20.90
50th-Percentile Queue Length [ft/ln]	156.54	156.69	147.33	286.05	268.26	153.01	151.84	467.49	496.63	45.59	506.89	522.58
95th-Percentile Queue Length [veh/ln]	10.37	10.37	9.87	18.43	16.10	10.18	10.12	25.79	27.17	3.28	27.66	28.49
95th-Percentile Queue Length [ft/ln]	259.13	259.33	246.87	460.68	402.57	254.45	252.88	644.79	679.37	82.06	691.51	712.26

Movement, Approach, & Intersection Results

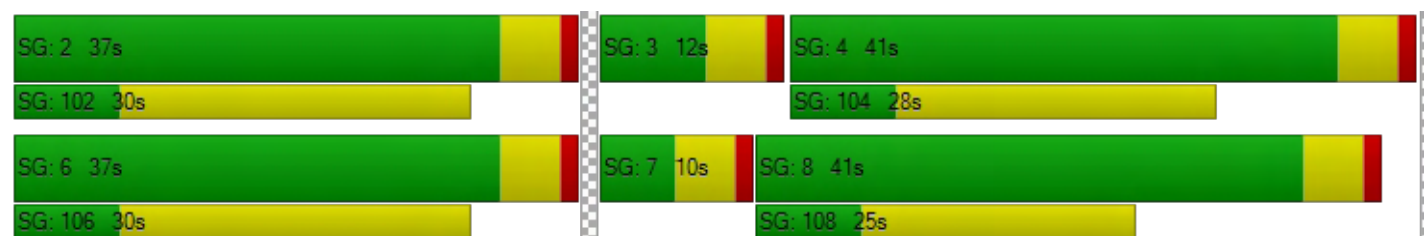
d_M, Delay for Movement [s/veh]	103.19	26.07	26.21	146.89	33.89	27.82	60.00	47.45	50.81	22.44	56.11	59.47
Movement LOS	F	C	C	F	C	C	E	D	D	C	E	E
d_A, Approach Delay [s/veh]	40.44			58.00			49.83			53.28		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	51.06											
Intersection LOS	D											
Intersection V/C	6.341											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.778			3.102			3.347			3.432		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			800			800		
d_b, Bicycle Delay [s]	18.69			18.69			16.20			16.20		
I_b,int, Bicycle LOS Score for Intersection	2.269			3.399			3.055			2.904		
Bicycle LOS	B			C			C			C		

Sequence

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



COMPLETION YEAR (2024) WITH PROJECT (EAGPC)

S2A Modular Manufacturing

Vistro File: G:\...\AM.vistro

Scenario 4 Opening Year (Phase2) with Project

Report File: G:\...\AMOY2p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.641	26.0	C
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	0.550	95.6	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	SB Left	0.603	14.8	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	SB Left	0.869	54.3	D
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	SB Left	0.484	17.5	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	WB Left	0.765	31.0	C
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	NB Thru	0.000	10.0	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.017	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	31.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.765

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	36	352	62	97	282	84	89	694	34	44	769	46
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	82	16	46	78	86	75	39	46	20	51	41
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	471	84	153	389	179	173	805	84	69	900	92
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	135	24	44	112	51	50	231	24	20	259	26
Total Analysis Volume [veh/h]	85	541	97	176	447	206	199	925	97	79	1034	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	16	34	0	14	32	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
g_i, Effective Green Time [s]	28	28	28	28	28	28	11	32	32	5	26	26
g / C, Green / Cycle	0.35	0.35	0.35	0.35	0.35	0.35	0.13	0.40	0.40	0.06	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.17	0.17	0.22	0.24	0.13	0.11	0.27	0.27	0.04	0.30	0.31
s, saturation flow rate [veh/h]	958	1900	1801	803	1900	1615	1810	1900	1837	1810	1900	1839
c, Capacity [veh/h]	223	671	636	252	671	570	238	764	739	104	623	603
d1, Uniform Delay [s]	32.54	20.23	20.24	32.56	21.90	19.19	33.92	19.69	19.70	37.19	26.00	26.02
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.19	0.19	0.11	0.30	0.30
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.87	2.52	2.68	14.83	5.17	1.77	7.56	1.85	1.93	10.87	15.15	15.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.49	0.49	0.70	0.67	0.36	0.84	0.68	0.68	0.76	0.93	0.93
d, Delay for Lane Group [s/veh]	37.41	22.75	22.92	47.39	27.07	20.97	41.48	21.53	21.64	48.06	41.15	41.84
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	D	D
Critical Lane Group	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.78	4.84	4.63	4.29	7.43	2.89	4.12	7.64	7.43	1.79	12.45	12.19
50th-Percentile Queue Length [ft/ln]	44.43	120.94	115.75	107.22	185.70	72.30	103.05	191.10	185.77	44.70	311.19	304.65
95th-Percentile Queue Length [veh/ln]	3.20	8.44	8.16	7.69	11.90	5.21	7.42	12.18	11.90	3.22	18.23	17.91
95th-Percentile Queue Length [ft/ln]	79.98	211.12	203.97	192.13	297.44	130.14	185.50	304.46	297.53	80.46	455.85	447.78

Movement, Approach, & Intersection Results

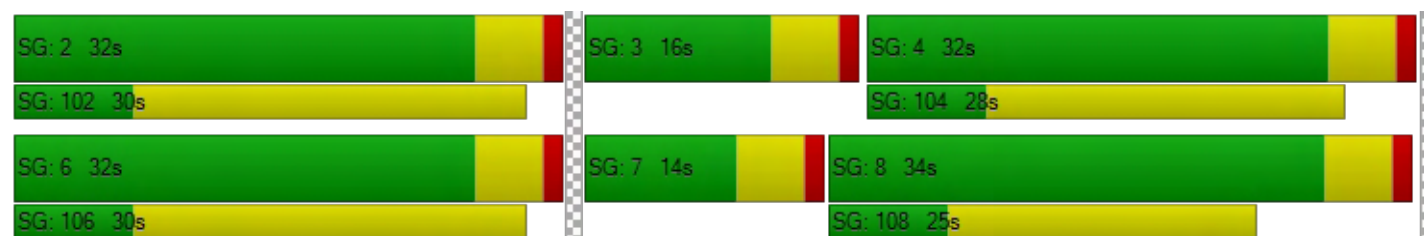
d_M, Delay for Movement [s/veh]	37.41	22.81	22.92	47.39	27.07	20.97	41.48	21.58	21.64	48.06	41.45	41.84
Movement LOS	D	C	C	D	C	C	D	C	C	D	D	D
d_A, Approach Delay [s/veh]	24.54			29.87			24.83			41.91		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	31.04											
Intersection LOS	C											
Intersection V/C	0.765											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	29.76			29.76			29.76			29.76		
I_p,int, Pedestrian LOS Score for Intersection	2.562			2.809			2.993			3.093		
Crosswalk LOS	B			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	675			675			725			675		
d_b, Bicycle Delay [s]	17.56			17.56			16.26			17.56		
I_b,int, Bicycle LOS Score for Intersection	2.156			2.927			2.567			2.565		
Bicycle LOS	B			C			B			B		

Sequence

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



S2A Modular Manufacturing

Vistro File: G:\...\IPM.vistro

Scenario 4 Opening Year (Phase2) with Project

Report File: G:\...\IPMOY2p.pdf

5/11/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	State Street / Esplanade Avenue	Signalized	HCM 6th Edition	NB Left	0.878	38.9	D
2	State Street / Crows Nest PI	Two-way stop	HCM 6th Edition	EB Left	1.463	439.4	F
3	State Street / Fruitvale Avenue	Signalized	HCM 6th Edition	NB Left	0.657	15.0	B
4	State Street / Menlo Avenue	Signalized	HCM 6th Edition	EB Thru	1.045	106.5	F
5	State Street / Devonshire Avenue	Signalized	HCM 6th Edition	NB Left	0.591	17.9	B
6	State Street / Florida Avenue	Signalized	HCM 6th Edition	SB Left	0.984	53.6	D
7	Project West Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Thru	0.000	9.8	A
8	Project East Access at Crows Nest PI	Two-way stop	HCM 6th Edition	SB Left	0.062	9.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 6: State Street / Florida Avenue

Control Type:	Signalized	Delay (sec / veh):	53.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.984

Intersection Setup

Name	State St			State St			Florida Ave			Florida Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	State St			State St			Florida Ave			Florida Ave		
Base Volume Input [veh/h]	49	350	74	146	330	173	134	1070	58	95	1023	81
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	140	43	80	138	130	135	60	76	37	55	79
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	526	125	241	502	321	283	1241	140	142	1184	168
Peak Hour Factor	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142	0.9142
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	144	34	66	137	88	77	339	38	39	324	46
Total Analysis Volume [veh/h]	160	575	137	264	549	351	310	1357	153	155	1295	184
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	5	0	0	5	0	5	5	0	5	5	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	4.0	0.0	0.0	4.0	0.0	4.0	4.0	0.0	4.0	4.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	37	0	12	43	0	10	41	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	18	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	0.00	3.00	3.00	0.00	3.00	3.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	48	38	38	48	36	36
g / C, Green / Cycle	0.36	0.36	0.36	0.36	0.36	0.36	0.53	0.42	0.42	0.53	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.18	0.19	0.19	0.35	0.29	0.22	0.47	0.40	0.41	0.26	0.39	0.40
s, saturation flow rate [veh/h]	872	1900	1775	750	1900	1615	665	1900	1834	596	1900	1819
c, Capacity [veh/h]	149	678	633	218	678	576	331	800	772	294	757	725
d1, Uniform Delay [s]	43.37	23.09	23.09	39.74	26.18	23.79	29.12	25.11	25.57	19.47	26.84	27.06
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.40	0.42	0.19	0.43	0.44
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	95.94	3.10	3.32	129.15	10.11	4.74	35.92	18.51	24.04	2.51	27.47	33.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.08	0.54	0.54	1.21	0.81	0.61	0.94	0.95	0.97	0.53	0.99	1.01
d, Delay for Lane Group [s/veh]	139.31	26.19	26.42	168.90	36.29	28.53	65.04	43.62	49.61	21.98	54.32	60.39
Lane Group LOS	F	C	C	F	D	C	E	D	D	C	D	F
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.18	6.41	6.03	12.56	11.75	6.48	6.51	18.44	19.61	1.66	20.48	21.07
50th-Percentile Queue Length [ft/ln]	179.41	160.15	150.72	313.91	293.84	162.00	162.65	460.89	490.36	41.47	511.94	526.87
95th-Percentile Queue Length [veh/ln]	12.06	10.56	10.06	20.44	17.38	10.65	10.69	25.48	26.88	2.99	27.90	28.76
95th-Percentile Queue Length [ft/ln]	301.57	263.93	251.40	510.88	434.40	266.36	267.22	636.93	671.94	74.64	697.47	719.05

Movement, Approach, & Intersection Results

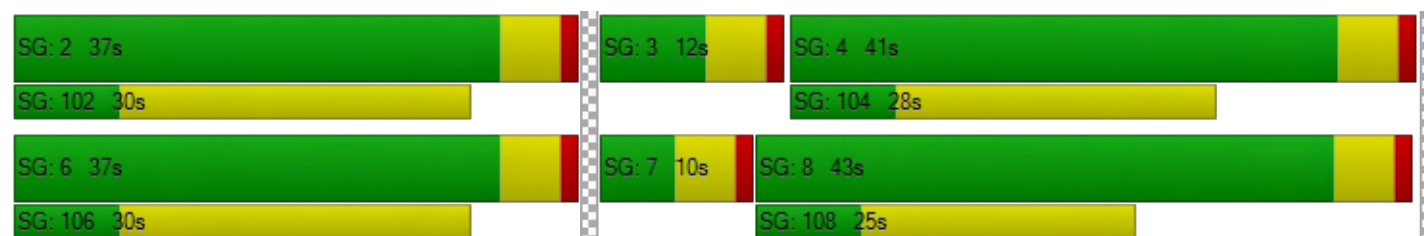
d_M, Delay for Movement [s/veh]	139.31	26.27	26.42	168.90	36.29	28.53	65.04	46.27	49.61	21.98	56.88	60.39
Movement LOS	F	C	C	F	D	C	E	D	D	C	E	E
d_A, Approach Delay [s/veh]	47.04			64.02			49.75			53.96		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	53.60											
Intersection LOS	D											
Intersection V/C	0.984											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.790			3.122			3.352			3.447		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	711			711			844			800		
d_b, Bicycle Delay [s]	18.69			18.69			15.02			16.20		
I_b,int, Bicycle LOS Score for Intersection	2.279			3.480			3.061			2.908		
Bicycle LOS	B			C			C			C		

Sequence

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





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